

Report of the
National Commission on
Macroeconomics and Health

MINISTRY OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF INDIA, 2005

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Macroeconomics and Health**

EQUITABLE DEVELOPMENT



HEALTHY FUTURE

Report of the National Commission on Macroeconomics and Health



National Commission on Macroeconomics and Health
Ministry of Health & Family Welfare
Government of India, New Delhi
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This Report does not address tertiary care and related areas such as super speciality hospital development in the public or private sector, telemedicine, medical tourism, environmental pollution or food safety etc. though they are all equally important. The Commission Report is based on background papers which can be accessed from the NCMH website www.mohfw.nic.in. They have also been published in two companion volumes. This report was written during the period April 1, 2004 - March 31, 2005.

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Preface

THERE IS A GROWING REALIZATION THAT THE HEALTH OF THE PEOPLE OF A NATION SIGNIFICANTLY contributes to its economic growth. Assuring a minimal level of physical and mental well-being is a critical constituent of the development process. Our commitment to the goal of reforms with a human face entails priority attention to the social aspects of development, in particular, education and health. It is for this reason that the National Common Minimum Programme accords such high priority to these two sectors.

The terms of reference of the National Commission on Macroeconomics & Health, included among others, a critical appraisal of the present health system – both in the public and the private sector – and suggesting ways and means of further strengthening it with the specific objective of improving access to a minimum set of essential health interventions to all. It was also intended that the Commission would look into the issue of improving the efficiency of the delivery system and encouraging public-private partnerships in providing comprehensive health care.

The health system in India is at the cross roads – dramatically changed from what it was a few decades ago. Liberalization of the economy has expanded opportunities for additional employment and generation of additional incomes which, in turn, have helped reduce poverty levels. Such a development process has however also caused changes in lifestyles, increased urbanization and connectivity and enhanced access to information and services not available earlier. These and other factors, in one way or another, have profoundly impacted on the epidemiological and health seeking behavior patterns of the people. With rising demand for health services, the inadequacies of the present health system – both in the public and private domains – are increasingly becoming evident. The responsibility of the government in providing an efficient and purposeful health system, covering all aspects such as health education, preventive programmes and curative services, has considerably increased. Further, the government, besides strengthening the current public health system has also the challenge of fruitfully utilizing the widespread private health system to address public health goals and make it accessible to the poor at affordable prices. It is in this background that the Commission's Report assumes special importance and significance.

The Report seeks to boldly address many critical issues confronting the health sector such as inequitable access to basic services resulting in welfare loss for the poor, the inefficiencies in the system resulting in waste and suboptimal utilization of existing resources, the poor quality and declining values, ethical norms etc. The absence of patient rights and citizens-entitlements to a basic package of health services – preventive, promotive and curative – has disturbed and provoked us to throw up some specific recommendations for the way forward.

It is quite clear that setting up a universally applicable health care system of acceptable quality, that is commensurate with the present and future levels of demand, will take more than a decade to realize if we initiate the process today. We need more research, better skilled human resources in adequate numbers, better-designed policies that are aligned to this aspiration, and effective debate and widespread discussion on the challenges that are facing the health system of the country. We believe that an equitable and efficient health system will enable us to ensure the realization of the various goals laid down in our policies and, in particular, the Millennium Development Goals by 2015 to which we stand committed.

The Report is based on extensive consultations with experts. Over 30 meetings were held and 34 papers/surveys commissioned. We take this opportunity to express our thanks to all the contributors, reviewers and experts who took time off to attend the consultations. We also thank the ministries, departments and organizations of the Central and State governments, special invitees, officials, researchers and experts for their help and assistance. We would like to thank Dr. Ranjit Roy Chaudhury, Chair of the Sub Commission, and the members and technical consultants of the Sub Commission for shouldering the onerous responsibility of deliberating the various issues confronting our health system and submitting a useful policy-oriented Report for our consideration. We would also like to record our special appreciation of the tireless efforts put in and the commendable services rendered by Ms. Sujatha Rao, Secretary of the Commission in assembling the voluminous material and giving form and shape to the Report.

We eagerly look forward to the prospects of considering the various recommendations of the Report, for effective implementation, with the objective of improving the welfare of the common person in the country.



Dr. Anbumani Ramadoss

Union Minister for Health & Family Welfare



Shri P. Chidambaram

Union Minister Finance

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Executive Summary



Executive summary

Introduction

T

he promotion of health is of fundamental value in and of itself. It is a vital public good and a basic human right. With the Human Development Index ranking countries on achievements that affect quality of life and access to basic necessities governments have been forced to redefine development. Universal access to health including water, sanitation, nutrition, primary education, communication and employment are essential to a balanced development.

India's achievements and unfinished agendas

India has substantial achievements to its credit. Longevity has doubled from 32 years in 1947 to 66 years in 2004; Infant Mortality Rate (IMR) has fallen by over 70% points between 1947–1990; malaria has been contained at 20 lakh cases; smallpox and guineaworm have been completely eradicated and leprosy and polio are nearing elimination. In the last five years over five hundred thousand deaths have been averted due to the upscaling of Directly Observed Treatment Short-course (DOTS). Indian doctors are comparable to the best in the world. They are technically proficient, and capable of performing sophisticated procedures and that too at a fraction of the cost available in the West.

These achievements should not mask India's failures. Levels of malnutrition and rates of infant and maternal deaths stagnated during the 1990s. Currently, life expectancy at birth, infant and under-five mortality levels are worse than those of Bangladesh and Sri Lanka. Pakistan eradicated smallpox, guineaworm disease and polio much before India could. Although we account for 16.5% of the global population, we contribute to a fifth of the world's share of diseases: a third of the diarrhoeal diseases, TB, respiratory and other infections and parasitic infestations, and perinatal conditions; a quarter of maternal conditions, a fifth of nutritional deficiencies, diabetes, CVDs, and the second largest number of HIV/AIDS cases after South Africa.

Microeconomic impact of illness

The decline in public investment in health and the absence of any form of social insurance have heightened insecurities. The unpredictability of illness requiring substantial amounts of money at short notice are impoverishing an estimated 3.3% of India's population every year. The poorest 10% of the population rely on sales of their assets or on borrowings, entailing inter-generational consequences on the family's ability to access basic goods and affecting their long-term economic prospects.

What ails India? Disease burden and prioritizing investments

Limited resources mean that not every health condition can be attended to. The public health system is overwhelmed by the coexistence of communicable and infectious diseases alongside an emerging epidemic of non-communicable diseases. Communicable diseases are expected to decline but the emergence of new infections and non-communicable diseases will have to be dealt with, as they are likely to increase quite sharply in the event of the current status quo of inaction towards their prevention. Based on reviews of available data, it is estimated that by 2015 the number

of HIV/AIDS cases would be three times more than the current level, entailing possibly a corresponding increase in the existing prevalence level of TB of about 85 lakh cases. Perinatal and childhood conditions are not expected to decline significantly. We may not be able to achieve the targets set for 2010 in the various policy documents or even by 2015 as laid down in the Millennium Development Goals.

India's disease burden will increase significantly due to non-communicable diseases. Cardiovascular diseases and diabetes will more than double – cancers will rise by 25%. Mental health affects about 6.5% of the Indian population and is expected to increase due to stress on account of frequent disruptions in incomes, unemployment, lack of social support systems, etc.

Prevention – the key for reduced disease burden

Prevention of diseases, particularly non-communicable diseases that are expensive to treat, is the most cost-effective strategy for a country facing scarce resources. Preventive strategies will vary depending on causal factors. For example, integrated approaches for vector control through decentralized management systems are known to significantly reduce incidence of vector-borne diseases. Access to clean water and sanitation services and better hygienic practices like hand-washing will reduce diarrhoea. Likewise, increasing advocacy and awareness efforts against tobacco use will reduce CVD, lung and oral cancers drastically. Promotion of exercise and yoga is increasingly acknowledged to reduce stress and obesity, diabetes and other lifestyle diseases.

India's health system: The delivery of health care services

The principal challenge for India is the building of a sustainable health system. Selective, fragmented strategies and lack of resources have made the health system unaccountable, disconnected to public health goals, inadequately equipped to address people's growing expectations and inability to provide financial risk protection to the poor. Access to medical care continues to be problematic due to locational reasons, bad roads, unreliable functioning of health facilities, transport costs and indirect expenses due to wage loss, etc. making it easier to seek treatment from local quacks. This explains the gross underutilization of the existing health infrastructure at the primary level contributing to avoidable waste.

The reasons for this failure can be attributed to three broad factors: poor governance and the dysfunctional role of the state; lack of a strategic vision; and weak management.

The structural mismatch in the institutions at the Centre and State levels, with many departments and agencies duplicating work or working at cross-purposes make governance in health ineffective. Contributory factors for a dysfunctional health system are unrealistic and non-evidence-based goal-setting, lack of strategic planning and inadequate funding.

Weak management

Key factors that adversely affect the functioning of the public health system are poor management of resources and centralized decision-making, low budgets, irregular supplies, large-scale absenteeism, corruption, absence of performance-based monitoring and conflicting job roles making accountability problematic. There is a real need for HRD policies related to recruitment, promotion, transfer and training. The demoralization and demotivation that exists among the workforce must be countered by enhancing professional competencies and career opportunities. The neglect in developing the required skill mix and in particular public health expertise is hindering us from achieving national health goals.

Vertical versus horizontal programmes: Lack of focus

Centrally designed vertical programme have impeded the country's ability to build a credible health system responsive to the every day health needs of the people. The NHP, 1983 made a strong commitment to establish comprehensive primary health care – to be based on two pillars – 1. the active involvement of the community and 2. inter-sectoral linkages to nutrition, water and sanitation, etc. Yet, resource constraints led to the prioritization of interventions.

Though interventions have been based on cost-effectiveness, disproportionate impact on poor, and technical feasibility, yet, evidence from community-based experiments and surveys show that people's health needs and expectations from their health system are different from the ones prioritized. Centrally driven vertical programmes are known to fail to integrate with the provisioning of general health services, weaken the health system as a whole and, over time, get disconnected from local health problems, priorities and the community itself. Therefore, India needs to seriously introspect on the effectiveness of vertically driven strategies, particularly when such strategies are implemented in a campaign mode in a health system that is unable to synchronize its several responsibilities.

Devolution of authority to local bodies

Given the vastness and diversity, India will find it difficult to reverse the rising trend of communicable diseases such as malaria, TB and HIV/AIDS without the active participation of communities. While the 73rd and 74th Amendments give us an opportunity to foster a democratic system of governance in health, enforcement has been tardy. Besides functional delegation, fiscal devolution encompassing expenditure decision-making with revenue responsibilities is equally important. An approach that merely 'orients' locally elected representatives to be 'involved' in health activities is of marginal value.

The role of the private sector in health care delivery

Private health markets are profoundly affected by several factors: nature of health financing and payment systems, types of technology, cost of initial education and training, public expectations and perceptions, regulatory frameworks, societal values, etc. International experience shows that the private sector tends to focus on profit maximization and is hardly concerned with public health goals, making state intervention essential.

The convergence of decreasing public investment, emergence of non-communicable diseases, an effective demand and the liberalization-privatization process since the 1990s has enabled the entry of the corporate sector in health. Seeing the scope for profit, several non-resident Indians (NRIs) and industrial/pharma companies are setting up super-specialty hospitals, capable of providing world-class care at a fraction of the cost available in the West. There is thus an enormous potential for India to become a hub for medical tourism. However, the trade-offs in terms of welfare implications cannot however be ignored. It will raise the overall cost of health care in the country and generate pressures for increased budgetary allocations for government hospitals to stay competitive.

Current status of the private sector in India

The private sector consists largely of sole practitioners or small nursing homes having 1–20 beds, serving an urban and semi-urban clientele and focused on curative care. A survey of the qualified provider markets in eight middle-ranging districts: Khammam (AP), Nadia (WB), Jalna (MH), Kozhikode (Kerala), Ujjain (MP), Udaipur (RJ), Vaishali (BH) and Varanasi (UP) showed:

1. A highly skewed distribution of resources – 88% of towns have a facility compared to 24% in rural areas, with 90% of the facilities manned by sole practitioners.
2. The private sector has 75% of specialists and 85% of technology in their facilities.
3. The private sector account for 49% beds and an occupancy ratio of 44% whereas the occupancy rate is 62% in the public sector.
4. Acute shortage of human resources with an average of 0.4 doctors per 1000 and 0.32 nurses per 1000 population as against the national average of 0.59 for doctors and 0.79 for nurses and a global norm of 2.25 per 1000 population. Nearly two-thirds of these doctors are concentrated in urban areas. Of the 80 blocks surveyed, 35 had a negligible to nil numbers of nurses or doctors either in the public or private sector.
5. 75% of service delivery for dental health, mental health, orthopaedics, vascular and cancer diseases and about 40% of communicable diseases and deliveries are provided by the private sector.

An overview of the private sector

1. Serious supply gaps and distributional inequities;
2. Need for uniform standards and treatment protocols;
3. Need for cost controls and quality assurance mechanisms;
4. Regulations to protect consumer interests and enforcement systems;
5. Supporting the NGO/charitable or the third sector which has the capability to provide reasonable quality care at affordable rates and the potential to serve the poor in under-served areas if appropriately incentivized and supported.

The three drivers of health care costs

Health system costs are driven by the nature of the human infrastructure, drug regime and technology used.

Human resources for health

Several attempts to develop community based health workers have been unsuccessful. Evaluations of such attempts show that community-based health workers/volunteers require periodical training, close supervision and an integral linkage with the organized health system.

The first interface of the formal health system with the community are the 2 multipurpose workers (MPWs): The 18-month trained ANM and the 6-month trained male worker manning one sub-centre for every 5000 population. With virtually no scope for in-service training there is low motivation and high absenteeism. With over 60% of the male worker posts vacant, this cadre is the most neglected.

Two other critical categories of paramedics are the laboratory technicians and pharmacists. Here too, there is a dilution of standards. For the 9-month diploma course in laboratory technology a XIIth standard pass is considered eligible, even with Arts/Humanities background. Standards need to be upgraded to graduate level, i.e. BSc (Laboratory Technology). Besides the 49% vacancies in primary health centres (PHCs) and community health centres (CHCs) must be filled up on priority. Similarly, competency levels of pharmacists also need to be enhanced as the diploma-trained pharmacists are at best equivalent to pharmacy assistants in developed countries though they perform tasks normally reserved for registered pharmacists.

Nurses and midwives are an important segment of health care provisioning. India has an adverse nurse population or nurse doctor ratio as compared to other countries. Yet only an estimated 40% of registered nurses are active because of low recruitment, migration, attrition and drop-outs due to poor working conditions. The quality of nurse training is also poor affecting their ability to take advantage of job opportunities within and outside the country. Poor training is due to the non-adherence to teacher: student norms, inadequate infrastructure, insufficient budget, inadequate clinical facilities and insufficient hands-on training for students. In several places nursing schools function more as appendages

of the district hospitals. In 2004, 61.2% of nursing schools/colleges were found unsuitable for teaching. De-recognition by the INC had no impact as they continue to function with the permission of the State Nursing Council. This situation calls for immediate correction.

Doctors too are in short supply. India has a doctor-population ratio of 59.7 physicians for 100,000 population, worse than most developed countries which have 200 and more for every 100,000 population. There are extensive distributional inequities in the availability of doctors.

Specialist services — Inadequate and non-available

In Community Health Centres alone there is a shortfall of 62% of sanctioned posts of specialists and of the remaining, 38% are lying vacant, exhausting staff due to overwork and resulting in compromising on the quality of care. Viewed from the norm of one Medical College for a 50 lakh population, States like Uttar Pradesh, West Bengal, Chhattisgarh, Madhya Pradesh, Orissa, Assam and Rajasthan have a shortfall. Even where medical colleges and universities exist, there is an overall shortage of teachers affecting quality of instruction. There is an urgent need to address these issues in a comprehensive manner, sanction more PG seats in scarce specialties and multi-skill existing doctors through intensive in-service training programmes.

Access to essential drugs and medicines

India's pharmaceutical market, both bulk drugs and formulations, is valued at Rs 35,000 crore in 2003-04 as against Rs 10 crore in 1950. The annual compound growth rate of production during the past three decades has been quite high. The production of bulk drugs registered a 12.38% growth; formulations 11.05% and total production 11.17% (in current prices). Ten of the top 25 drugs sold in India are non-essential, irrational or hazardous. The market for drugs is highly concentrated with implications on price setting.

Price of drugs

Only 76 drugs accounting for around one-fourth of the drug market are under price control. An examination of the price trends of 152 drugs (consisting of 360 formulations) reveals that antibiotics, anti-tuberculosis and anti-malarial drugs, and drugs for cardiac disorders, etc. registered price increases from 1%-15% per annum during 1976-2000.

Indian households spend 50% of their total health expenditures on drugs and medicines. Reducing this burden and ensuring access can be achieved by: (i) bringing all drugs under price control to ensure lower prices for the households; (ii) streamlining and putting in place a system of centralized pooled procurement of drugs so that the public health system can save almost 30% to 40% on costs; (iii) weeding out irrational drugs and irrational combination drugs; and (iv) encouraging ISM drugs for treating diseases for which efficacious and

low-cost drugs are available. Price control, as is the practice in several countries such as Canada, is justified on the basis of the drug prices outstripping WPI. Second, this will address about 90% of the health needs of the community and reduce household spending on these services. Price control should not be limited to essential drugs as the industry can then simply switch its production to the non-controlled categories, depriving people of access to essential drugs.

Weak regulatory environment

Spurious and substandard drugs have been a longstanding concern. Poor enforcement of regulations is due to inadequate and weak drug control infrastructure at the State and Central levels. Only 17 of the 31 States and Union Territories have drug-testing facilities, and in all states there is an acute shortage of manpower for enforcement.

Product patent regime

Integration with the global systems will help us access the latest technology. But then it also carries the potential risks of increased prices hindering access to essential drugs. One way of countering this is to step up publicly supported R&D, encouraging public agencies, universities and private companies to develop new drugs that are essential to the poor. For instance, development of vaccines for preventing TB, malaria, HIV/AIDS, etc. needs to be supported by offering both fiscal and non-fiscal stimuli. Such incentives should be made conditional to capping prices of new drugs or maintaining a minimum quantity of production of essential drugs to assure regular access.

To safeguard consumer interests patent amendments still need to clarify issues relating to: (i) the scope of patentability; (ii) cap on royalty payments; (iii) plugging all ambiguities and technical loopholes in the amendment to avoid unnecessary and expensive litigation in future; and (iv) vesting discretionary powers in the patent office in terms of timelines of rules, not to affect credibility and objectivity.

Medical devices technology: A case for appropriate policies

In India, concerns regarding medical technology have been by and large limited to pharmaceutical drugs, regulation of diagnostics for sex determination of the foetus and corruption in public procurement. Developed countries on the other hand, have encouraged research to help them institute policies for monitoring and predicting potential impacts of medical innovations on health expenditures. Technological change accounted for more than 20% increase in health spending in the United States of America during 1980-2000, mainly due to increased volume of utilization of medical devices and higher prices.

Three factors are responsible for increased utilization of medical technology, the first and third are particularly significant: (i) use of advanced medical applications for individuals, not

using before- 'treatment expansion'; (ii) 'treatment substitution' – use of medical advances to replace existing procedures/services; and (iii) use of medical advances as 'add-on' services to increase the intensity of services.

A survey of the utilization of high end technology showed that:

- Procedural delays hampered acquisition of technology in the public sector.
- Due to higher down time and lower utilization, the average cost per unit was much higher in public facilities.
- Non Availability of good quality spare parts and severe shortage of technical experts for repairing medical equipment;
- Absence of regulations for countering problems with the medical device supply and maintenance industry in the private sector, standards and norms for quality, sale and siting of high-end technology, based on norms related to efficiency in resource use.

Public health financing in India

Public sector spending accounts for less than a quarter of the total health spending in India. However, it plays a major role in terms of planning, regulating and shaping the health care delivery system. Such public provisioning is essential to achieve equity and address the large positive externalities associated with health.

Public spending (i.e. expenditures incurred by health departments of Central and State Governments) on health gradually accelerated from 0.22% in 1950-51 to 1.05% during the mid-1980s, and stagnated at around 0.9% of the GDP during the later years. In terms of per capita expenditure, it increased significantly from less than Re 1 in 1950-51 to about Rs 215 in 2003-04. Public spending under the National Health Accounts framework was about 1.3% of GDP out of an overall health spending of 4.8% of GDP.

Public health spending by State Governments

Health being a state subject, financing is primarily by the state governments. Resource allocation to this sector is influenced by the prevailing fiscal situation. The budgetary allocations to the health sector during 2003-04 declined by more than 2 percentage points as compared to 1985-96. Despite a reduction in the health budget from 7.02% in 1985-86 to 4.97% in 2003-04, the fiscal deficit as a percentage of the gross state domestic product (GSDP) recorded an increase, implying that allocation to health does not necessarily accentuate fiscal deficit.

User charges as an option

All states levy user charges for services in secondary and tertiary-level hospitals in the public sector, which accounts for 2% to 3% of the total health budget. A study of the user fee policy in Andhra Pradesh (AP) highlighted three important aspects:

1. a decline in budgetary support to the Andhra Pradesh Vaidya Vidhana Parishad (APVVP – looks after all district, subdistrict and Community Health Facilities), from 16.7% in 2001-02 to 10% in 2003-04. This shows that user charges substituted rather than supplemented existing budgets.
2. aggregate utilization of funds from user charges was low (except in 2003-04), ranging from 12.8% to 53.5% in Telangana (the more backward part of the state), compared to 82.8% to 93.5% in the Andhra region.
3. the number of poor accessing public health facilities fell, particularly for inpatient services. The experience of Maharashtra is reported to be similar.

Public health spending by the Centre – 1990-2001

During the decade 1990-2001 Central spending had five notable characteristics:

1. gradual reduction in the proportion of funds released to states under the grant in aid mechanism from 60% to less than 40% at a time when the states were themselves under fiscal stress.
2. sharp reduction in capital investment in public hospitals from 25% of the budget in 1991 to less than 6% in 2001 at a time of technological innovation and increased public expectations.
3. increased subsidy for own employees under the CGHS consuming 18% of the budget of the Department of Health on less than 0.5% of the country's population.
4. low priority to preventive and promotive health with less than 0.5% of total public health spending.
5. gross underfunding of National Health Programmes (NHP) which require a minimum of Rs 11,210 crore against which the Centre and States spent an estimated Rs 5563 crores (2001-2002) resulting in the suboptimal functioning of the delivery system and huge out of pocket expenditures on services 'guaranteed' under the NHP.

Underutilization of funds

Despite mounting evidence to justify a quantum jump in public budgets for health, the Central Ministry routinely surrenders budgets allocated to it. Reasons are both systemic and institutional, such as instability in budget releases, intense fragmentation, lack of flexibility, inadequate attention to maintenance of assets created and operational expenses; lack of uniformity in health budgeting between Center and states and among states making any tracking of expenditures impossible. Lumping of releases affect the availability of drugs and other inputs on a regular basis and also affect synchronization of the mix of inputs. Current systems of budgeting are useful for audit and accounting purposes as the key objective is expenditure control. Since financial expenditure is the key indicator for achievement, the cumulative energy of the health departments go towards obtaining 'utilization certificates' and releasing funds to field agencies.

The financial structures are archaic and need to be restructured from the perspective of achieving health system goals. The current system of budgeting makes it impossible to identify where expenditure controls need to be exercised, types of skill-mix needed, the departments that should be closed down and those that need to be expanded in keeping with shifting demand. Since hospital budget allocations are largely based on historical precedence and bed strength, there are situations where one department has funds but few patients, while another has restricted funding and two patients on one bed.

The Way Forward

Improving health in India will require building up the health system in the next ten to twenty years. Five core concerns emerge when facing the challenge of improving health in India:

- (i) promoting equity by reducing household expenditure on total health spending and experimenting with alternate models of health financing;
- (ii) restructuring the existing primary health care system to make it more accountable;
- (iii) reducing disease burden and the level of risk;
- (iv) establishing institutional frameworks for improved quality of governance of health;
- (v) investing in technology and human resources for a more professional and skilled workforce and better monitoring.

These concerns need to be addressed by stimulating the process of reform. Reforms should aim to overhaul the existing system that is dominated by low-quality health care, is costly and unaffordable for the majority of the people, and where the public sector is under-funded, poorly equipped and constrained by bureaucratic procedures. If India is to stay committed to achieving the National Health and Population Policies in 2010 and the Millennium Development Goals in 2015, this Commission recommends that public spending be increased from the current level of 1.3% to 3% of GDP in the next few years. The additional resources can form the building blocks for implementing the Commission's recommendations for a strong and viable health care system in India.

Building on values

The Commission believes that the health system in India needs to be based on a set of core values such as compassion, concern for the strict adherence to ethical norms and an unflinching commitment to patients' well being. We recommend the following principles to guide public policy:

- Accountability to the health and well-being of the community it serves;
- Responsibility to the patient who receives treatment and care in dignity, fairness, without discrimination and in consonance with the basic tenets of a patients, charter;
- Accessibility at all times and at all facilities – no one should be denied care on grounds of time, distance or place of residence;
- Adaptability to ensure that local practices, traditions and preferences are given due consideration;

- Participatory – providing leadership in bringing about behavioural changes for adoption of healthy lifestyles and practices that promote well-being and good health values;
- Recognizing the special value of mothers, children and senior citizens in society.

Two initiatives need to be taken to implement the principles enunciated above:

1. Gradually shift the role of the State from being a provider to a purchaser of care, and
2. Ensure that the three tiers of the primary health system are embedded within the community by establishing appropriate institutional structures for enhancing accountability in the system.

1. Reducing household expenditures of the poor: Options for financing comprehensive health care

To ensure access to a standardized schedule of benefits consisting of essential health interventions, we recommend a shift in the provision of services from the current concept of individual vertical programmes to a comprehensive package of services consisting of three components:

1. a core package consisting of public goods and costing Rs 150 per capita, to be made universally accessible at public cost;
2. a basic package consisting, in addition to the above, surgery and medical treatment costing Rs 310 per capita; and
3. a secondary care package costing Rs 700 per capita and consisting of treatment for vascular diseases, cancer and mental illness, and referrals.

Innovative financing models must be tried to ensure that such packages are universally accessible

Government would require a five-fold increase in the budget or Rs 1 lakh crore @ Rs 1160 per capita per year if it is to be the sole provider of the comprehensive package of services consisting of preventive, promotive and curative services. Resource limitations necessitate two options:

- (i) targeting only the poor for publicly funded care; and/or
- (ii) considering alternate models of health financing where a part of the cost is shared by households, under different instruments such as capitation, vouchers and insurance. Each of these financing systems entail risks and benefits which need to be understood in their entirety. It is therefore recommended that these alternative models be pilot tested to assess their suitability in Indian conditions.

Social health insurance for secondary care is important as impoverishment takes place at this level. Insurance empowers individuals to access comparable quality of care irrespective of economic status. It functions on the principle of cross-subsidization where the rich, healthy and the young subsidize the sick, old and the poor. For assuring equitable access to secondary care and reducing the financial burden on households, considering India's diversity and disparities, a careful blending of social health insurance, community-based health insurance and limited and well regulated private health insurance is recommended as a way forward.

Attempts to protect the poor from income shocks under the Universal Health Insurance Scheme failed for two reasons: one, the risk pool is confined to below poverty line families already at high risk, making it a losing proposition; and two, lack of any institutional mechanisms to implement the scheme. What is needed to deepen health insurance markets is a catalyst that can bring in the required volume and velocity. One such option available in the Indian scenario is the merger of the medical component of the ESIS and the CGHS, to be re-constituted as the Social Health Insurance Corporation of India (SHIC) – the first stand-alone health insurance company in the country. This was the vision articulated by the then Prime Minister, Nehru, while launching the CGHS for Government employees to be implemented on a pilot basis in 1954. We are 50 years late.

SHIC is envisaged as a re-insurer like NABARD, providing funding to health insurance companies (like the SBI), cooperative societies/HMOs (like Grameen Banks), etc. which could all be entities competing for this pool of funds. Such plurality and competition will bring in efficiencies and reduce costs. But for this Corporation to be successful, the culture of management will have to be modernized and professionalized.

In view of our negligible experience in handling health insurance markets and given the social risks involved, it is essential that institutional assistance be sought from developed markets while designing future strategy. Further, in introducing new financial instruments like insurance, it would be imperative to first undertake action and sequence reform for ensuring the following prerequisites: formulating legislation for administering health insurance and establishing an Independent Health Regulator; undertaking disease classification, and enabling risk assessment for fixing fair premium; developing standards and treatment protocols for preparing the schedule of benefits along with unit cost estimations; and establishing formal mechanisms for health service provisioning, arbitration and standard-setting.

II. Raising accountability of the existing system of primary health care

The existing system of primary health care has collapsed in several parts of the country, for reasons other than underfunding. This needs correction by the active participation of civil society and by incentivizing the system.

Government must accept responsibility to provide basic primary health care to its citizens. To do so within the framework of the guiding principles it is necessary to involve the community and locally elected bodies. Institutional mechanisms for such oversight functions need to be established at different levels of the health delivery system such as for example, Village Health Committees and empowered management committees at the PHC and CHC levels. Local bodies should be mandated to discharge a set of functions. At the district level a professionally organized District Health Authority consisting also of public representatives from the facility level management committees should be constituted. It is believed that a broader and wider participation in health affairs, will engender a greater appreciation of the costs involved and make

them shoulder more responsibilities. A major recommendation in this regard is to give the community the choice between having a subcentre manned by two workers or having a village based health unit consisting of the local RMP (Unqualified Registered Medical Practitioner), the traditional birth attendant and a VLW (Village Level Worker). The Health Unit would be trained to carry out a specific protocol of functions and work under the technical supervision of the PHC but be accountable to the community. The advantage of this system is that it will ensure access to health care for minor ailments addressing over 80% of health needs in the village itself and be far more cost-effective than the subcentres.

III. Reducing the disease burden

Assuring nutritional security requires fair pricing policies that will allow access to a minimal balanced diet across a vector of nutrients, such as proteins, vitamins, fats, carbohydrates and other vital micronutrients. Analysis of consumption patterns carried out across quintile groups and food groups, show that the poverty line based on a 'balanced diet' measure is higher than what is officially notified.

An analysis of 321 districts showed that 163 had very adverse indicators regarding malaria, leprosy and RCH as well as problems of access to water, sanitation, low literacy levels and high levels of poverty, accounting for nearly half the disease burden and poverty in the country. These districts are predominantly in states such as Bihar, UP, etc. that are also under severe fiscal stress. It is recommended that the Central government provide recurring assistance to these States and appoint key frontline workers and technical personnel for a fixed time period and thereby help contain and reverse further progression of disease and achieve health goals. Such focused and outcome/performance-based assistance will significantly impact on reducing disease burden on the overall and alleviate poverty on account of ill health.

Shifting from a curative, techno-managerial approach to a biomedical public health approach and stepping up prevention of disease and health promotion for behavioural change is an imperative to reduce disease burden. A quantum jump in resource allocation is required to sustain this activity. Formulation of a National Information Policy is recommended.

IV. Regulations and institutional infrastructure for coping with health markets

To facilitate the proposed paradigm shift in reorganizing and financing the health system, we need to develop institutional capacity with a critical mass of multivariate skills for enforcement of regulations and designing flexible and innovative approaches, keep vigil and synthesize information from various sources for assessing trends. The Commission believes that the proposed institutional infrastructure is a bare minimum. The bodies should be autonomous and self-financing. We recommend their establishment on priority. Experts with demonstrated experience in the field should be associated as issues are complex and require in-depth knowledge.

FEDERAL DRUGS AUTHORITY – for regulation and monitoring of drug quality, efficacy and safety, monitoring, evaluation and dissemination of findings of clinical and drug trials, pricing and rational use of drugs as already recommended by the Mashelkar Committee in 2002.

INDIAN MEDICAL DEVICES REGULATORY AUTHORITY – for laying standards and certification of quality, appropriateness and safety, norms to minimize the abuse of technology and optimize resource use, on the lines suggested by the High-level Committee constituted by ICMR in 2000 and the Sikka Committee of the INSA. Given the nature of the work involved it should be independent of the Ministry of Health since it is only the end user of technology.

EXPANDING PUBLIC PROCUREMENT SYSTEMS – of drugs, devices and vaccines for immense costs saving to the public exchequer. Autonomous bodies like the Tamil Nadu Medical Services Corporation (TNMSC) should be established at the Central Government and State levels.

NATIONAL INSTITUTE FOR HEALTH INFORMATION AND DISEASE SURVEILLANCE – for formulating a systematic policy approach to research, evidence evaluation, conduct disease burden estimations, maintain the National Health Accounts, undertake cost-effectiveness studies of interventions, independent evaluations of programme implementation, etc.

NATIONAL COMMISSION FOR QUALITY ASSURANCE (NCQA) – For assuring uniformity and standardization, the NCQA should have a legal mandate to license various accreditation bodies, design and approve the course and remuneration for assessors, establish minimum physical standards for accreditation and settle disputes.

R&D – NATIONAL INSTITUTE FOR HEALTH RESEARCH – The ICMR should be upgraded as a full-fledged department to provide leadership in stimulating research in drugs and vaccines, invest funds for upgrading public sector research institutions and build multidisciplinary research units that must include the blending of physical, medical and social sciences.

COMMISSION FOR EXCELLENCE IN MEDICAL AND HEALTH EDUCATION – The deterioration in the quality of training in professional colleges needs to be arrested immediately. This requires the strengthening of supervision and establishing quality standards in teaching and designing new courses to cope with the rapidly changing disease profile and fostering an environment for quality in health care and patient safety.

HEALTH FINANCING CORPORATION OF INDIA (HFCI) – The Public Health sector alone needs a capital investment of about Rs 50,000 crore to meet current needs. To enable health facilities to conform to standards over the next five to ten years HFCI, like the ILFS, could be a useful mechanism.

Institutional Mechanism for Enforcement of Regulations

The Commission recommends that action to strengthen the enforcement machinery be initiated in three principal areas:

1. Institution of Quality Assurance Cells in the Ministries of Health at the Central, State and district levels, and in all provider facilities for imparting and raising awareness about quality in a comprehensive manner;
2. Establishment of Epidemiological Health Units at the Ministry of Health at the Central, State, district and CHC levels to monitor public health laws, enforce regulations, and disseminate information to the public on public safety measures.
3. Provisioning of adequate number of drug inspectors at the local level for monitoring and enforcing compliance to regulations.

V. Professionalization of Service Delivery

1. HUMAN RESOURCES FOR HEALTH: Professionalization of human resources for health is an imperative in the knowledge-technology driven global environment. Low-cost solutions are inadequate for coping with the extraordinary situation prevailing in India. Some key recommendations are listed below for immediate action as the gestation period of developing human resources is long.

Nursing: It is recommended that in another 5–10 years, 225 new nursing colleges be established, 769 schools be upgraded and 266 colleges be strengthened. Action must be initiated to develop the 10,000 nursing faculty required for these institutions by providing fellowships and other incentives. As an estimated minimum of 3.5 lakh nurses just for primary and secondary care would be required by 2015, hospitals/medical colleges with over 500 beds should also be encouraged to establish training schools. Focus should however be on quality.

Medical Colleges: To ensure distributional equity across States, establish 60 new medical colleges in states with a shortage – UP, Bihar, MP, Orissa, West Bengal and Rajasthan. Adopt policies to develop the required pool of teaching faculty for these colleges. To increase the number of doctors in disciplines related to the National Health Programmes, about 466 postgraduate seats for Ophthalmology, Anaesthesia, Paediatrics, Psychiatry, Gynaecology and Obstetrics are required.

Public health: Establish an All India Cadre of Public Health to infuse fresh dynamism; earmark posts that must be manned by people who have basic public health qualification; and establish 6 schools of public health to serve as centres of excellence for training in public health in addition to strengthening PSM departments of medical colleges and existing public health institutions.

High Level Task Force for HRD Policy framework: The Commission recommends the constitution of a high-level task

force to examine various aspects of the deteriorating environment in medical colleges and nursing schools. Issues related to service conditions, payment systems, particularly for specialists, and incentives for stimulating better quality of training and research should be comprehensively addressed.

2. USE OF INFORMATION TECHNOLOGY (IT): There are four areas for expanding the use of information technology in medicare:

- (i) telemedicine — our study shows huge direct and indirect savings by the use of telemedicine.
- (ii) Computers for patient record-keeping, inventory control and monitoring, data collection and reporting in all facilities, pharmacy shops, etc.
- (iii) Edusat facilities for training — this satellite link up could yield substantial savings for training.
- (iv) GIS mapping of all facilities and restructuring the location of health facilities as per need and functional utility.

3. TELEHEALTH: To counter the distance factor (a major barrier in access to health care and health information) it is recommended that public policy encourage establishing call centres to provide health information, advice to treat minor ailments, etc. This will result in substantial cost-saving of both direct and indirect costs and also open employment avenues.

Financing the way forward — Issues and challenges

Fiscal pressures have resulted in the compression of State expenditures and a steady decline in social expenditures. The combined expenditure of States in the 1990s on medical, health, sanitation, water supply and family welfare declined from 8.4% of total expenditure to 7.2% in 2001–2002. As a proportion of GSDP, the decline was from 1.5% to 1.3% during this period. Achieving MDG goals and the Tenth Plan objectives in India, in this scenario, will be possible only if there is a significant increase in resources, targeting areas and population groups with low health indicators and focusing on the upgradation of the health system through a well sequenced process of reform.

Our estimates indicate that public investment for provisioning of public goods and primary and secondary services alone will require about Rs 74,000 crore or 2.2% of GDP at current prices. When added to the current level of 0.9%, the total public health spending (i.e. expenditures incurred by health departments at Central and State level) in proportion to GDP the amount required will be about 3%. Such spending will bring down the household expenditures by over 50% and entail substantial health gains.

The projected investment of Rs 74,000 crore consists of an estimated Rs 33,000 crore for capital investment required for building up the battered health infrastructure; and Rs 9000 crore towards premium subsidy for the poor under a mandatory Universal Social Health Insurance programme covering the entire country over the next 15 years; and an estimated

Rs 41,000 crore for recurring costs towards, salaries, drugs, training, research, etc.

The enhancement of health budgets will need to be accompanied with complementary investments in the areas related to employment, water, sanitation, nutrition, primary schooling and road connectivity. Barring employment, filling the gaps in the remaining sectors as per government norms is estimated to require Rs 3 lakh crore, with one lakh each for primary schooling and road connectivity. Assuming a 5% allocation for health and health related sectors out of the States' discretionary grants; a 25% of the 2.5 lakh crore that the States have the capacity to mobilize by way of taxes if they so wish to; and the Rs 5000 crore provided by the 12th Finance Commission, yet, about 9 States will be in acute financial deficit requiring additional assistance from the Centre to the tune of Rs 20,900 crore to come up to the country's minimum bar of providing access to basic needs.

Over the years, social investment will need to be increased from the current level of 2.7% of GDP to about 9.7% — an increase of 7% points of GDP. This can be achieved by various measures such as increasing, widening and deepening the scope for taxation; increasing and strategizing deployment of donor aid for better outcomes; accrue savings by bringing in systemic organizational and financial reform aimed at optimizing resource use, reducing the flab and enabling a more efficient use of resources in other sectors as well; levy user fees on discretionary services at all facilities but within a policy framework that protects the poor through exemptions and concurrent monitoring of utilization of services by these groups, and/or insurance systems. In not levying user fees but promoting insurance, public hospitals stand to lose, as restricted budgets and no access to alternative sources of funds such as user fees and insurance reimbursements, will place them at a distinct disadvantage over the private sector.

The way forward: steps to obtain social consent

Health affects all citizens. It is therefore essential that the system be designed to reflect the aspirations, needs and requirements of the people as well as those who provide them the services. Building a social consent through a consultative process will provide greater sustainability to the reforms proposed in this report. Accordingly, it is recommended that

- Task Forces consisting of knowledgeable and eminent people and representing all stakeholder groups be constituted to detail out the issues, the operational plans and financial implications.
- For issues requiring an intersectoral perspective, a Group of Ministers may be constituted to deliberate the various policy issues.

The key issue is having a vision, defining it in clear terms and formulating the steps ahead in the knowledge that the realization of this strategy will take more than a decade and that action taken now will help the future generations.

Introduction



Introduction

Good health is universally acknowledged to be of intrinsic value and therefore constitutes an integral element of development. One can be rich but sick enough to not enjoy any opportunities that wealth opens up, and poor health may translate into worsening economic opportunities as well. In fact, one can also be healthy but too poor to pursue valued objectives.

A new awareness of the multidimensional nature of development as a process much broader than economic growth and with health as a crucial ingredient, emerged with the Human Development Index, the Gender Development Index and the Human Poverty Index by the United Nations Development Programme. With the introduction of indicators to evaluate and rank countries on the basis of achievements that affect quality of life, reduce deprivation to basic necessities and gender equality, governments have been forced to redefine development. The annual publication of these indices and the associated discussions around them have, over the years, contributed to the increasing acceptance of the idea that development ought to be viewed in terms of the extent to which individuals are able to live in the manner they find fulfilling.

These ideas have profound implications for countries such as India and Africa which have large populations fighting for mere survival. For them the choices of enjoying basic freedoms that are so routinely guaranteed to people living in developed countries are dependent on the more fundamental issue of 'if alive'. With millions dying prematurely due to the non-availability or unaffordability, or both, of medical attention, it is only reasonable that the focus of development should be on matters related to providing universal access to health and its determinants such as water, sanitation, nutrition, primary education, communication and employment. Macroeconomic environments that pursue such compatible policies view health as central to development, a vital public good, and a basic human right.

India's achievements and the unfinished agendas

Improvements in socioeconomic conditions during the last five decades yielded India successes she can take pride in – doubling of longevity from 32 in 1947 to 66; the fall of IMR by over 70% points between 1947–1990; containment of malaria at 20 lakh cases; eradication of small pox and guineaworm and the near certainty of the elimination of leprosy and polio in the next few years; averting over five hundred thousand deaths in the last five years due to the upscaling of DOTS and reducing every year an estimated 9% deaths due to TB. And the technical proficiency of Indian doctors and professionals to perform sophisticated procedures and deliver services of comparable quality as available in the most advanced countries at a fraction of the cost.

However, these achievements, remarkable though they may be, cannot mask India's failure to arrest the unacceptably high levels of morbidity and mortality, particularly due to communicable and infectious diseases. The 1990s saw the stagnation of the levels of malnutrition, infant and maternal mortality. Despite India's widely acknowledged intellectual prowess, an inherent capability to adapt and innovate, and a relatively well performing economy, the record on ensuring good health to its citizens' has been below its potential. The decline in public investment in health, the unpredictability of illness and the absence of any form of social insurance have increased vulnerability, heightening insecurities and a sense of powerlessness, particularly among

those too poor to afford private treatment and too dependent on the breadwinners to neglect their need for treatment, no matter the costs. The not so poor households live on the brink – ever vulnerable to having their life's savings and assets being irreversibly eroded. It is estimated that hospitalization expenditures result in the impoverishment of 330 lakh persons annually, with adverse consequences on the future well being of their children as well. Clearly, if India, like China, is to reap the benefits of a demographic dividend and become an economic powerhouse in 2030, it will have to ensure that people are healthy, live long, produce wealth and shake off the tag of a 'high risk country'.

As can be seen from the Table A, under every indicator India's performance has been low. Even more telling is the fact that similarly placed countries, in terms of historical legacy or economic pressures, like Bangladesh, Sri Lanka and Nepal have better health indicators. Against India's IMR of 68 per 1000 live-births, Bangladesh is 66, Nepal 64 and Sri Lanka 8. Again the Under-5 mortality rate is higher at 87 per 1000 live-births in India compared to Bangladesh's 69, Nepal's 82 and Sri Lanka's 15. Bangladesh and Sri Lanka have a longer life-expectancy at birth at 63 and 71 against 62 of India.

Although we account for 16.5% of the global population, we contribute to a fifth of the world's share of diseases; a third of the diarrhoeal diseases, TB, respiratory, and other infections and parasitic infestations, perinatal conditions, a quarter of maternal conditions, a fifth of nutritional deficiencies, diabetes, CVDs, and second largest number of HIV/AIDS cases after South Africa.

Within the country, there is a north-south divide and persistence of extreme inequalities and disparities both in terms of access to care as well as health outcomes. While Kerala's life-expectancy at birth is 74, MP is 56-indicating a 18-year gap. A few States and approximately a quarter of the districts account for 40% of the poor and over half of the malnourished, nearly two-thirds of malaria and kala-azar, leprosy, infant and maternal mortality – diseases that can be easily averted with access to low-cost public health interventions such as universal immunization services and timely treatment. These are also the States that have an acute crises of human and financial resources.

Future direction to face the challenges of tomorrow

India faces a dual challenge. Even as it needs to contain and reduce prevalence levels of pre-transitional diseases, it is burdened with a growing increase of HIV/AIDS infections alongside the emergence of non-communicable diseases which are very expensive to treat, such as diabetes, vascular diseases, hypertension, mental health, cancers, injuries, respiratory infections, etc. Worse, there is increasing evidence that these 'lifestyle' diseases affect the poor due to low resilience to infections, poverty-induced malnutrition and stress. Coping with these set of new diseases along with the pre-transition diseases calls for reforms in India's health system. We need to address the demand for new skills such as counselling, psychiatry, trauma care, etc. We also need to reorganize the financial systems that provide incentives to providers and patients for adopting rational and cost-effective health practices based on core values of patient safety and adherence to ethical norms of conduct. Convincing scientific evidence at the global level demonstrates that appropriate interventions in the organizational and financial structures, holding income and growth constant, can improve health indices.

Given the fact that India has limited resources, we need to achieve higher returns on investments already made in health infrastructure. India will also need to focus on taking a quantum leap to utilize government resources for public information and dissemination of health messages, through compulsion or persuasion, sound dietary and life-style habits. Australia brought down accident rates by enforcing laws related to use of helmets and seat belts. Malaysia reduced cholesterol levels by substituting palm oil with soya. The US and other developed countries have resorted to extensive financial and legal instruments to deter people from smoking. Such actions help reduce overall morbidity and social costs. India cannot afford to have over 35 lakh people, with 50% from the productive age groups, die of heart diseases or provide treatment to 690 lakh cases of heart ailments or 200 lakh of HIV/AIDS cases in 2015. Investments on setting up the required health infrastructure for providing treatment will be clearly unaffordable and staggering. Therefore, these diseases have to be prevented by stepping up a multipronged effort, aimed

Table A

India in comparison with other countries

Indicator	India	China	USA	Sri Lanka	Thailand
IMR/1000 live-births	68	<30	2	8	15
Under-5 mortality /1000 live-births	87	37	8	15	26
Fully Immunized (%)	67	84	93	99	94
Births by skilled attendants	43	97	99	97	99
Health expenditure as % of GDP	4.8	5.8	14.6	3.7	4.4
Government share of Total Expenditure (%)	21.3	33.7	44.9	48.7	69.7
Government health spending to total government spending (%)	4.4	10	23.1	6	17.1
Per capita spending in international dollars	96	261	5274	131	321
Source: WHR, 2005					

at, for example, reducing unsafe sex, increasing awareness on diet and need for exercise, hygiene, reduced alcohol and tobacco consumption, promotion of yoga which is universally recognized to be the cheapest way of reducing stress, a range of chronic ailments and staying healthy. India will also have to expand the range and skill base of human resources – public health specialists such as epidemiologists, biostatisticians, entomologists, trained regulators, hospital managers and administrators, health economists, cost accountants, doctors, nurses, technicians, etc., to sustain a more modernized and professionalized health system. In fact under-funding apart, India's efforts to scale up interventions to achieve global commitments made at the Millenium Conference in 2000 to reduce infant and child mortality by two thirds; maternal mortality by three quarters; and reverse the spread of HIV/AIDS, TB and malaria by 2015, risk being unfulfilled due to lack of adequate human resources. India has an acute shortage of doctors at 59 per 100,000 population compared to nearly 200 in most developed countries; the shortage of nurses is even more acute.

Another area of concern is increasing R&D activity in the field of drug production and medical devices. To ensure self-sufficiency and security against the vagaries of market fluctuations, we need an increase in budgetary allocations for R&D. Our greatest strength has been access to high-quality affordable drugs manufactured by a highly skilled local pharmaceutical industry. This advantage needs to be protected and adequately supported, possibly with public funding, to ensure that the best minds are engaged in finding solutions for diseases that affect a majority of the country's population and make us self-sufficient in getting access to basic drugs and vaccines.

Doing all the above and more requires adequate funding. India is one of the five countries in the world where public spending is lesser than 0.9% of GDP and one of the fifteen where households account for more than 80% of total health spending. The need to increase spending on health is well recognized. The Common Minimum Programme of the current Government has committed itself to raise public health spending to 2%-3% of GDP. Such an increase would be required for strengthening the regulatory aspects of governance, expand-

ing the scope and institutional capacity for intensive health education and dissemination of public information, disease surveillance and research. In addition, there is need to strengthen delivery of health services, decentralize systems for monitoring and oversight by involving civic bodies and establishing systems for ensuring accountability and providing financial risk protection.

These are challenging times. India can look forward to achieving a better quality of life for its people by taking advantage of the heightened level of interest among the wider global community to engage in global health issues and the rapid technological advances. The ease and fluidity with which people and disease are able to cross national boundaries make all nations vulnerable to microbial infections as witnessed in the SARS and avian flu epidemics that adversely impacted China and Southeast Asian countries. This calls for strengthening our public health vigilance and developing a measure of self reliance in matters of access to essential drugs and vaccines.

In conclusion, it is clear that the need of the hour is for reorganizing and increasing investment in health and related sectors. Current government expenditures could be made more efficient by restructuring the financing and organizational systems to get over the pre-transition diseases and also to develop the capacity to cope with the huge epidemic of non-communicable diseases which are more expensive to treat; and address the key barriers – human resources and institutional capacity to achieve higher levels of access, efficiency and quality. The foundation for such a strategy will, however, need to be based on three principles: basic values of equity, compassion for the suffering and an unswerving focus on the poor and the underprivileged; a bold evaluation of what went wrong and why, preceding the formulation of future strategies; and finally, the recognition of the centrality of health to poverty alleviation and overall economic development.

The Commission Report attempts to undertake such a process of critical enquiry and provide some options for future action over the short, and medium- and long-term so that the universal aspiration of all Indians to have access to an equitable, efficient and quality health system is realized by 2025.

SECTION I

Investing in health for economic development



Investing in health for economic development

Policy emphasis on health does not imply inattention to economic growth, a concern for some who view economic growth as a pre-condition for increased investments in health. While rising incomes could lead to better health, the relationship also works in the opposite direction. Until the early 1990s, health was relatively neglected as a factor that influences national economic performance. Much of the focus was only on education, an important component of human capital. Today, improvements in health constitute an important element of what has come to be known as ‘pro-poor’ economic growth strategies that have the potential of enhancing economic growth, while simultaneously reducing economic inequality. There is now a considerable body of international evidence that suggests that while improvements in national economic performance may positively influence health, there also appears to be a strong link running from improved health to improved economic performance. In fact, evidence shows that about one-third of the increase in income in Britain during the nineteenth and twentieth centuries could be attributed to health and nutrition. India is currently in stage 2 as depicted in Box 1.1 below. A rapid transition is needed in which efficient health systems improve quality of life, well-being of people and reduce burden of diseases, which will in turn increase productivity and growth in the country (stage 3).

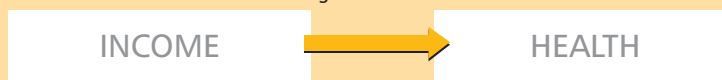
Recent research has established a strong causal association running from health to aggregate economic performance and from wealth to health. Higher incomes potentially permit individuals and societies to afford better nutrition and access to better health care, better health increases productivity, and enhances the ability to earn more income.

How does health influence economic growth? A recent survey of econometric literature on the link between health and economic growth suggests that a 5-year gain in life expectancy is associated with annual average rates of growth of real Gross Domestic Product (GDP) per capita that are higher by 0.06 to 0.58 percentage points. One analysis found that countries with high levels of malaria had much lower levels of per capita income. Several studies demonstrate that the HIV/AIDS epidemic has either lowered, or will significantly lower, the rates of growth of income per capita in

Box 1.1

Evolution of an understanding of the health-wealth nexus

STAGE 1: The traditional understanding



STAGE 2: The current state



STAGE 3: The desired state



high-prevalence countries. Healthier workers are likely to be more productive; and healthier children more likely to exhibit better cognitive skills, and become healthier adults.

In addition, there are effects that work through the population age structure. Reduced infant mortality rates are strongly correlated with a subsequent lowering of fertility. This creates an age bulge in the population age distribution, initially in the forms of large numbers of children, but later as a bulge in the population at working ages, as the baby boomers age. The consequent lowering of people in dependent age groups (the elderly and children) raises the income per capita in a purely accounting sense. In addition, there are behavioural effects that promote economic growth. With fewer children, parents will be willing and able to spend more on their nutrition and education, thereby enabling the children to be participants of a more productive labour force when they grow up. Individuals who expect to live and work longer—and this is ever more likely with improved medical technology—experience higher expected returns on investments in schooling, and will thereby have an incentive to acquire more human capital in the form of greater educational achievement. Living longer might also lead them to save more for the retirement phase of their life, especially if there are institutional constraints, or disincentives to their working beyond a certain age.

What does this mean for India?

From a purely economic perspective, the nexus between health-poverty-income suggests that per capita income and health status are strongly associated, while there appears to be an inverse relationship between poverty and health status, as shown in Figs 1.1 and 1.2 below. Analysis shows that life expectancy is likely to rise by 1.3% with a thousand rupee increase in per capita health expenditure. Similarly, life expectancy would rise by 2% with an increase of 10% per capita

income. As one may expect, increase in per capita income and the percentage of population living below the poverty line are negatively related and the decline in poverty is sharp, especially at lower levels of per capita income. Possibly the growth in income in the past three decades has had the desirable trickle-down effect.

India's economy has been growing at a moderate 5.5%–6% since the 1980s, breaking from its 3.5% growth witnessed during earlier decades. While India's real per capita average growth during 1970–2000 has been 2.4% per annum, inter-state inequality is a cause for concern. In fact, the range of variation in growth rates is from a low of about 0.9% and 1%, respectively, in Madhya Pradesh (MP) and Bihar, to a high of 3.8% in Maharashtra. The degree of economic growth and uneven growth of States has serious implications on health indicators and in turn on growth per se.

First, improvements in health are likely to enhance India's economic performance, as also of individual States. For instance, analysis using inter-State data suggests that if the residents of Uttar Pradesh were to have Kerala's life expectancy (nearly 15 years greater in 1995–99), the net effect on the State's output would be 60% higher than its current levels.

Second, India has the potential to benefit from the ongoing process of demographic transition in terms of national and State-level economic performance. The proportion of India's working population (15–64 years) is expected to increase for the next quarter of a century (Fig. 1.3). If used effectively, the rising number of workers in India's population have the potential of increasing the growth of real income per capita by an annual average of 0.7% points per annum till 2025. China's scorching growth rate over the past two decades has partly been because of the bulging working group population.

Apart from the effects observed at the macroeconomic level, there are adverse implications at the individual and household levels that can be ameliorated by investments in health. Ill health can lead to lost earnings on account of days missed for work

Fig 1.1

Life expectancy at birth (LEB) and per capita NSDP (Net State Domestic Product), 1970–2000
(Net State Domestic Product), 1970–2000

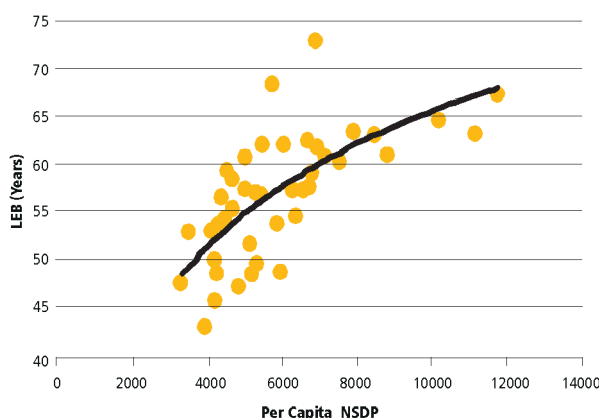


Fig 1.2

Trends in poverty and life expectancy at birth (LEB), India, 1972–73 to 1999–2000

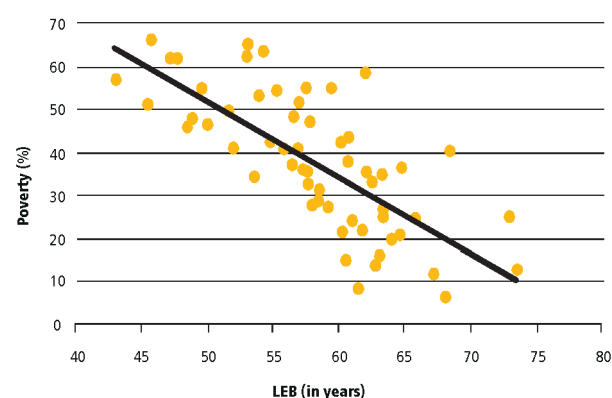
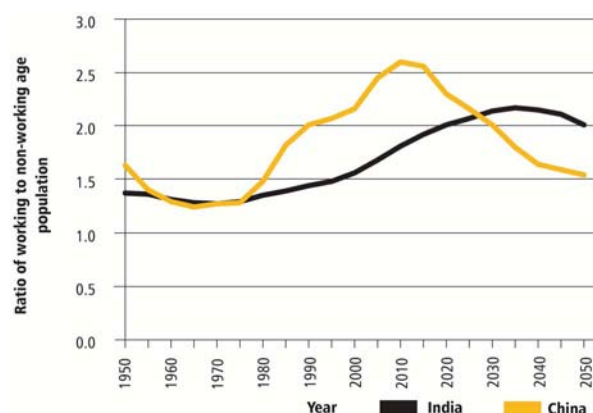


Fig 1.3
Ratio of working to non-working age Population, India and China, 1950-2050


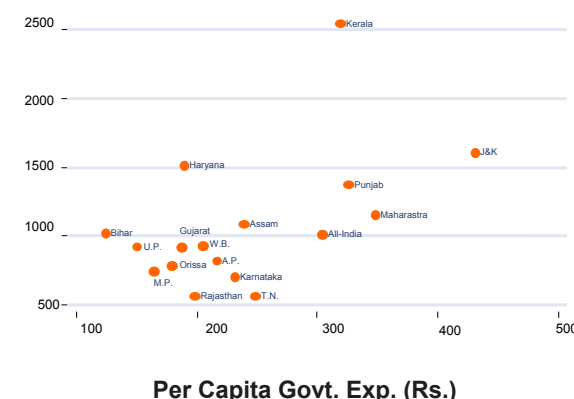
which, together with substantial expenditures incurred on account of medical treatment, can impoverish families, particularly those living on the margins of survival. The National Sample Survey (NSS) data for 1995-96 indicate that income losses from severe illness amounted to nearly 15% of the total annual consumption expenditures per capita of the poorest one-tenth of the population, compared to 7.7% for the richest one-tenth; and medical expenses for hospitalization typically ranged from 35% to 66% of annual per capita consumption expenditures. The financial impacts of ill health can be severe indeed — and can serve both to deepen poverty and increase the number of people living below the poverty line. Estimates based on household consumer expenditure surveys for India, suggest that the financial burden imposed by health related spending could raise the proportion of people living below the poverty line in India by as much as 3.3 percentage points. These estimates require the reasonable assumption that people living at or around the poverty line have imperfect access to credit markets; in its absence health spending could result in increasing the severity of poverty among the already poor.¹

The enormity of household spending due to illness is indeed grave. Equally disturbing are the large inter-State disparities in household spending. Kerala, which is a leading state in terms of health indicators, accounts for the highest household spending in India, with a little over Rs 2548 per annum (2004-05 current prices). In Uttar Pradesh, Madhya Pradesh and Orissa, both public expenditures and household expenditures are low (Fig. 1.4).

However, such statistics may not immediately convey the gravity of how ill health affects the standard of living. The poorest 10% of the population tend to disproportionately rely on sales of their assets or borrowing to finance inpatient care, having little access to savings or employer reimbursement. More-over, the greater reliance by the poor on the sale of draught

Fig 1.4
Fig.4. Per Capita Households and Govt. Expenditure in Indian States

Source: Based on NHA, 2001-02 and extrapolated for 2004-05.



animals, which are likely to be among their minimal base of non-labour income, and on borrowing, suggests that not only is their purchasing power eroded in the short term but also makes them vulnerable to slide into long-term poverty.

Expenditures are only a part of the overall picture. Given the financial consequences of ill health, the poor opt for care only if absolutely necessary. Evidence exists that when sick, poorer groups are less likely to seek care than rich groups, and nearly one-quarter of the poorest 20% in India's rural areas forgo treatment when reporting sick (Table 1.1) and when sick need-ing hospitalization go to the public hospitals. Perhaps the most important characteristic of ill health is that its impacts are likely to persist across generations. Not only is the next generation at risk from effects such as poor nutrition, inadequate housing, or insufficient hygiene and sanitation, but even after birth, children become more susceptible to many diseases and ailments than their parents were. Often, older children are pulled out of school to take care of a sick person at home or go to work owing to loss of family income, thereby affecting their long-term economic prospects. The impact on schooling or work may be particularly marked if an adult family member were to die, resulting in a decline in income and/or in other forms of support to a household's activities that are more permanent in nature.

A job left unfinished?

Beginning with the Bhore Committee Report of 1946 and the Indian Constitution, the Indian state has affirmed a number of times its objective of enhancing the average health of its citizens, reducing inequalities in health, and enhancing financial access to health care, particularly for the neediest. The Preamble to the Constitution of India, Articles 38 (2) and 41, stress

¹ ♦ The implicit assumption that underlies the above statement is that had there been no health spending, the household would have enjoyed a level of consumption that would have exceeded the poverty line. For the text statement to hold true regarding the impacts of illness on poverty one needs the following crucial assumption: Households at levels of income at or around the poverty line cannot lend and borrow freely (have limited access to credit markets). Thus, when they need to spend on health, all they have is their own resources. In the absence of health spending, presume they would have consumed all they earned in any given year.

Table 1.1
Proportion of reported ailments treated by expenditure quintile, 1995-96 and utilization of public- private sector by type of treatment

State and Region	Proportion of ailments treated, by bottom (1) and top quintiles (5)			
	Rural (1)	Urban (1)	Rural (5)	Urban (5)
All-India	75.7	84.2	88.3	93.4
Public Sector				
Inpatient cases in lakhs R-U	597.2		287.9	
Inpatient %	56.3	69.2	45.3	30.8
Outpatient cases in lakhs R-U	67.8		50.5	
Outpatient%	19.1	21.6	16.9	11.4
Private Sector				
Inpatient cases in lakhs	581.4		290.2	
Inpatient %	43.7	30.8	54.7	69.2
Outpatient cases in lakhs	307.5		224	
Outpatient %	80.9	78.4	83.1	88.6

Note: The richest quintile is denoted by 5, and the poorest by 1.
Source: National Sample Survey Organization (NSSO) 1998, 52nd, Round NSS

the need to provide equitable access and assistance to the sick and the underserved, while Article 47 stresses on improving nutrition, the standard of living and public health. If these goals were achieved in a significant way they would imply potentially large gains in the economic well-being and overall welfare of India's citizens. Yet, by almost any yardstick, India's success in achieving these goals can at best be regarded as mixed.

Consider India's performance relative to comparable international counterparts. Viewed in isolation, it has made substantial achievements in health over the past 40 years, but there is no doubt that it has lagged behind international trends. While an average Indian can now expect to live nearly 40% longer than his counterpart in 1960, an average Chinese can now expect to live nearly seven years longer than an Indian at the time of birth, and an average Korean nearly a decade longer. Currently, India's gains in life expectancy are moving at roughly the same long-run pace as those of Bangladesh. Pakistan eradicated small-pox, guinea-worm disease and polio much before India could.

Trends show that India's performance with regard to reducing infant mortality, while better than that of Africa, lags substantially behind that of all other regions in the world. Not only is India's performance worse than countries such as China and the Republic of Korea, it has been outperformed by Bangladesh in the past decade, a country with severely limited financial and human resources, and certainly much more limited than India's. Morbidity and mortality among children tends to be correlated with their nutritional status. Here too, using internationally accepted indicators such as 'weight for age' among children less than 5 years in age, India's performance was comparable more to Africa and neighbours such as Pakistan and Bangladesh than countries such as Korea and China, or those in the Latin American region.

Disparities in Health

India's performance in reducing health inequalities also stacks up unfavourably. For instance, in the most developed countries of the world, life expectancy at birth (LEB) among females exceeds that of males, all else remaining the same, by roughly 5 years. Yet, in India, until the past decade, LEB among males was greater than that of females, a telling indicator of the disadvantages women face in India with regard to achieving their health capabilities.

Consider next the likelihood of survival among females and males at the time of birth. It is true that female-to-male ratios of life expectancy have increased for all the States over the past 30 years; so there is some evidence that the status of women's health (relative to that of men) is improving. However, there is considerable inter-State variation in the ratios at any given point in time. With the exception of Kerala and to some extent Karnataka, none of the other States are even close to the women's health status in Latin America, the developed world, or high-performing countries in Asia such as the Republic of Korea. India still has a long way to go before it can claim to have achieved gender equality in health outcomes.

There are intra-State and inter-State variations in rural-urban inequalities in public health status as well. Two indicators—the ratio of urban-to-rural life expectancy at birth, and the ratio of urban-to-rural infant mortality rate (IMR) show that the average urban Indian can expect (at birth) to live longer than the average rural Indian; and that urban areas have lower infant mortality rates. However, these ratios differ considerably by State. Kerala has the least urban-rural inequality for both LEB and the IMR. The north Indian States of Punjab, Haryana and Uttar Pradesh, along with Maharashtra, also perform well in terms of urban-rural equity in terms of both health indicators. However, there are a few poor-performing outlier States with low urban-rural equity such as Assam and Madhya Pradesh for both measures, and Andhra Pradesh and Karnataka for infant mortality rate.

The picture of inter-State disparities in health status in India provides a darker picture. Although LEB improved remarkably in India during 1970-2000 from 49.7 to 61.7 years, the inter-State disparity is substantial. Kerala's LEB during 1995-99 was 73.5 years and that of Madhya Pradesh was as low as 56.4 years, a difference of 18.1 years. Similarly, the difference observed between Kerala and Orissa, the lowest and highest among IMR is, respectively 14 and 95 per 1000 live-births, a phenomenal gap of 81 per 1000 live-births. Interestingly, the second State with the lowest IMR is Maharashtra with 48, nearly three times higher than Kerala's IMR. This clearly shows that even States with a better health status have a long way to go to 'catch up' with Kerala.

Then there are inequalities across other categories of economically and socially deprived groups. The poor face a disproportionately greater share of the burden of ill health, as reflected in IMR and malnutrition rates. The prevalence of

serious morbidity per 1000 population due to certain diseases according to a household survey conducted in Tamil Nadu provide further evidence of such disparities based on the standard of living and social classes (Table 1.2).

A forthcoming study shows that the relative position of scheduled caste (SC) and scheduled tribe (ST) populations is worse in non-poor States when compared to the poor States. Women in India who are uneducated and poor are the most vulnerable to disease and ill health during their lifetime. The limited evidence that is available suggests that whereas socio-economic inequalities in health declined during the 1970s and 1980s, this decline may have slowed down or even reversed during the 1990s. (Figs. 1.5a–1.5f).

Apart from the objective of promoting health, protection from financial risk for the most in need has been a second major objective of Indian health policy-makers. The main mechanism by which the achievement of this goal was sought to be provided was free or subsidized care at public health facilities. Despite the provision of free or heavily subsidized health care, which the poor tend to use more than other groups, subsidies to the health sector are not particularly well targeted. In a perverse sense, subsidies benefit the rich more than the poor, particularly at higher levels of care, such as during hospitalization. Looking ahead, if Government expenditures on health continue to stagnate as they have and, as in some cases, decline, it is the poor who will be most affected. The poor will therefore access private health care, which may further impoverish them. A major concern is the lack of adequate health insurance in India today. A recent study has estimated that no more than 15% of health spending on curative care in India is covered by insurance in the form of employer, employee, voluntary insurance and non-governmental schemes, with another 20% coming from public subsidies in health facilities operated by the public sector.

Table 1.2

Differentials in prevalence of serious morbidity (for 1000 population) by selected variables

Nature of illness	Sex		Place of Residence		Standard of Living			Caste				Total
	Male	Female	Rural	Urban	Low	Medium	High	SC/ST	MBC	BC	Others	
Hypertension	2.667	4.432	3.553	3.205	3.050	2.707	5.333	1.315	2.996	4.820	18.817	3.533
Coronary Heart Diseases	6.046	5.910	6.241	1.603	7.210	6.091	4.333	7.365	5.093	5.954	0.000	5.979
Malaria	14.225	15.697	14.978	14.423	18.857	14.212	11.333	15.255	18.574	11.908	8.065	14.947
Others Specific Fever	3.201	2.585	2.688	6.410	1.941	2.933	4.000	4.997	4.494	5.387	0.000	2.899
Jaundice	6.046	3.509	4.993	1.603	4.160	6.091	3.667	0.526	0.300	1.134	0.000	4.801
Paralysis	0.889	0.369	0.576	1.603	0.555	1.128	0.000	0.263	1.498	0.284	2.688	0.634
Cancer	0.356	1.108	0.768	0.000	1.109	0.226	1.000	3.682	3.895	3.969	8.065	0.725
Tuberculosis	4.090	3.878	4.129	1.603	3.605	4.963	3.000	1.315	0.300	0.000	5.376	3.986
Fits	0.356	1.108	0.768	0.000	0.832	0.902	0.333	0.263	0.599	0.851	0.000	0.725
Poisonous Bites	0.533	0.554	0.576	0.000	1.109	0.000	0.667	0.000	0.599	1.985	0.000	0.544
Diarrhoea	0.711	0.923	0.864	0.000	0.832	0.902	0.667	0.526	1.198	0.851	0.000	0.815
Liver And Kidney Problem	1.422	0.185	0.768	1.603	1.387	0.226	1.000	1.578	0.899	2.268	2.688	0.815
Others	1.245	2.031	1.632	1.603	2.219	0.902	2.000	1.841	4.793	2.552	0.000	1.631
Total	41.785	42.290	42.535	33.654	46.866	41.281	37.333	38.927	45.237	41.962	45.699	42.033

Source : Inequities in Health, Rural Womens' Education Center, Tamil Nadu, 2005
SC- Scheduled caste, ST- Scheduled tribe, MBC- Most backward castes, BC- Backward castes.

Challenges Ahead

Clearly, investing in health is valuable on economic grounds as well as purely for improving the well-being of the population. The value of such investments is likely to be even greater for a country lagging in its health achievements, as is the case with India. In any case, much remains to be done, particularly with respect to achieving the Millennium Development Goals, with respect to child mortality, access to sanitation and other goals to which it is committed by the year 2015. These goals will have to be achieved in a dynamic environment, where both new challenges and opportunities are likely to arise. We highlight four such areas here.

Malnutrition — assuring nutritional security or 'hidden hunger' ?

In India, poverty is measured by using a narrow definition of “minimal consumption of a basket of pre-defined food items” of energy intakes (calories). Such an approach allows for a minimum intake of calories along with variation in tastes and preferences of population across regions. Our findings however show that this does not allow for the intake of many vital micronutrients, essential for a healthy body, necessitating the broadening of the approach to incorporate the notion of a minimal consumption of a balanced diet across a vector of nutrients, such as proteins, fat, calcium, iron, riboflavin, and others. More importantly, behaviour by desperate households living on the margins — that is, those living below survival levels of income — cannot be taken as an indicator of normative standard. Therefore, using this perspective, our findings reveal two points of concern : one, that the poverty line as well as the head count ratio (HCR) of poverty based

Health status and burden of disease in different social groups

Fig 1.5a

IMR by social groups in India

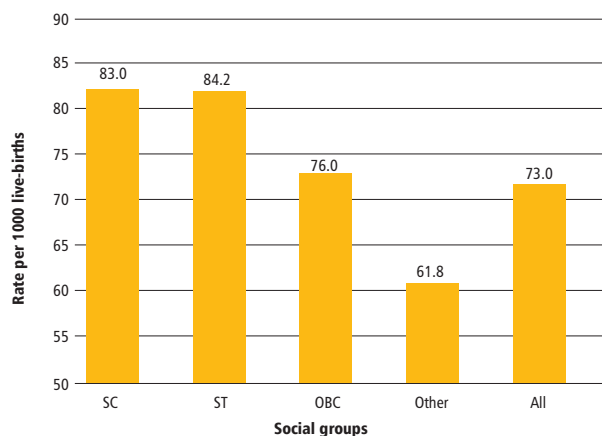


Fig 1.5b

Under-five mortality by social groups in India

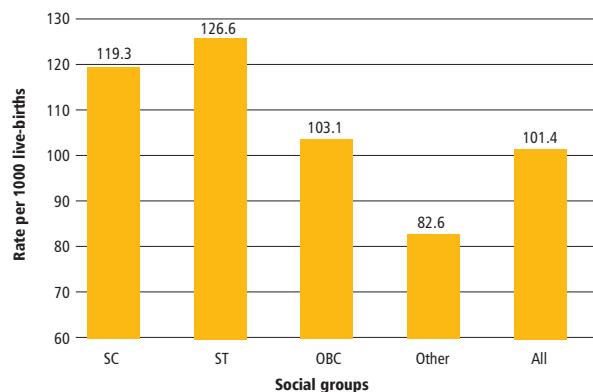


Fig 1.5c

No. of persons per lakh population suffering from TB by social group in India

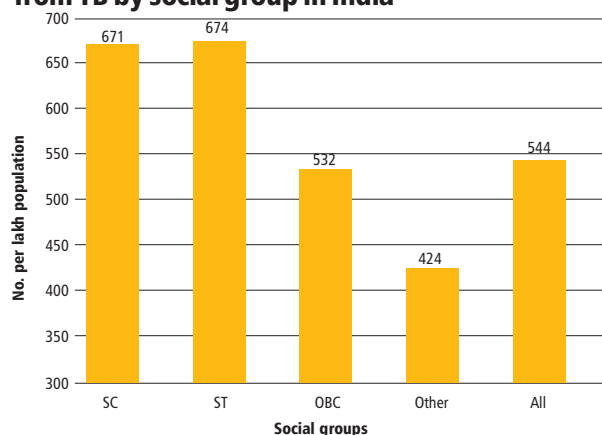


Fig 1.5d

No. of persons per lakh population suffering from Malaria by social group in India

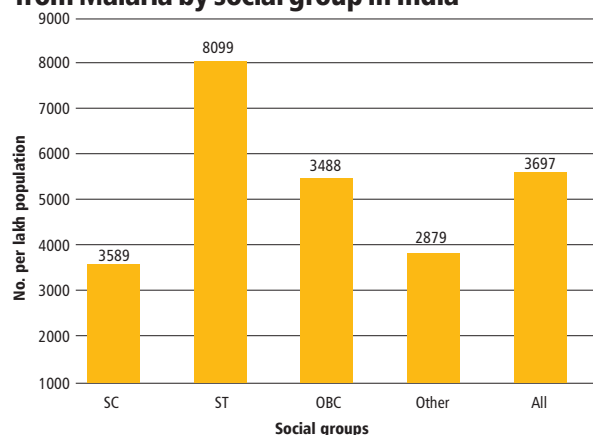


Fig 1.5e

No. of persons per lakh population suffering from asthma by social group in India

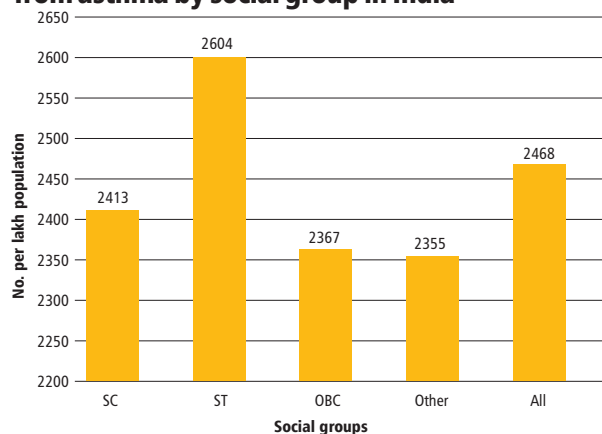
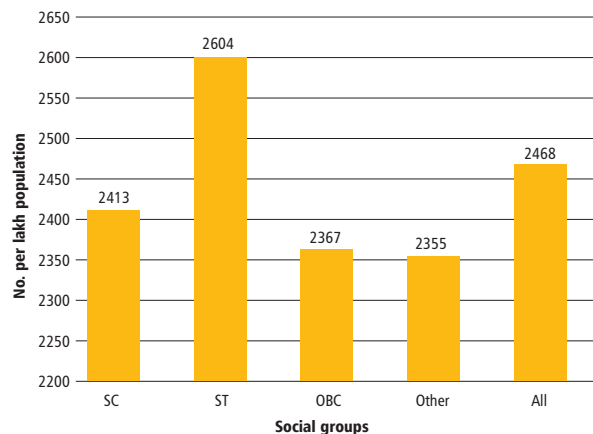


Fig 1.5f

Prevalence of disease



Figs 5a-f. National-level data for scheduled castes (SC) and scheduled tribes (ST) suggest that these groups tend to do worse in health and nutrition outcomes than members of other groups
Source NFHS II, 1998

on a “balanced diet” measure is higher; and two, that the decline in poverty has been at a slower rate than what is officially notified by the Planning Commission at the all India and state levels. Figure 1.6 presents levels of HCR of poverty in 1993-94 and 1999-2000 and the relative decline in nutritional and official poverty at the all India level. One of the most important reasons of higher nutritional poverty ratio is relative higher prices of food items rich in nutrients such as protein, fat, calcium, iron and vitamins like carotene and riboflavin. Further, relative faster price movements of these food items has resulted in slower decline in nutritional poverty as compared with the official poverty line estimations.

Reiterating the fact that nutrition is the fundamental determinant of health, a balanced diet approach – in terms of minimum set of required nutrients – needs to be adopted as a more appropriate indicator of measuring poverty for India. Such an indicator is valuable as it takes into account the role of micro-nutrient consumption in influencing health outcomes, as well as, help formulate public policies on agricultural prices of important food items rich in these nutrients in order to make them accessible to the poor. As asserted elsewhere, mere increase in incomes will not be enough to eliminate malnutrition quickly – relative prices of essential nutrients will also need policy attention. Thirdly special focus and policy instruments need to be instituted for reducing the considerable inter-state and regional (urban vs. rural) differences. The incidence of nutritionally poor population, particularly the rural poor, is the highest in Orissa, Bihar, Madhya Pradesh, Uttar Pradesh and Andhra Pradesh. In such states, health services need to incorporate a strong component of nutrition consumption, through the delivery of nutritional foods as well as educational packages to inculcate right eating habits

Another related issue is regarding the now well recognized problem of ‘hidden hunger’-as the problem of micronutrient malnutrition is referred to-being of a much greater magnitude than that of hunger alone. While estimates suggest

that 800 million people are undernourished, the number of people suffering from micronutrient under nutrition is as high as 3.5 billion globally; a very high percentage of these are in India. In India, the magnitude of iron deficiency is perhaps the greatest. Thus, for example, 70% of pregnant women in India suffer from iron deficiency anaemia (IDA); and the figure for young children is also high. Between 10 and 20 million children in India suffer from vitamin A deficiency (VAD) and 60,000 annually go blind because of VAD. The consequences of these deficiencies, in terms of impaired physical and cognitive development, disability and mortality are correspondingly staggering. This suggests that the concept of food security needs to be expanded to take into account the need for ensuring nutrition security. But alongside, there is need to address the huge problem of worm infestations of the gastrointestinal (GI) tract, which affect over three-quarters of the children in the country.

Current interventions to tackle micronutrient malnutrition include the fortification of foods, pharmaceutical supplements, and the promotion of dietary diversity (through home gardens and nutrition education, for example). For a variety of reasons, these interventions-with the exception of iodized salt-have yielded only mixed results. While there is increased awareness of the need for less intrusive and diet-based interventions, it is also necessary to understand the interactions between the various micronutrients on the one hand, and the role of a clean living environment (including safe drinking water) that minimizes the risk of infectious diseases on the other, in affecting positive health outcomes. Whether new, large-scale public health interventions may be (cost) effectively piggy-backed on existing policies also needs to be explored: distributing fortified cereals through the public distribution systems, or enhancing the micronutrient content of meals served in the school mid-day meals.

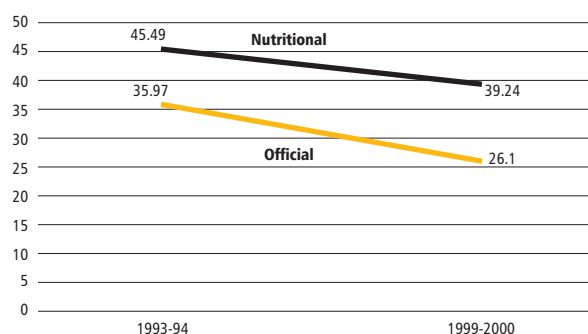
Lack of human resources and the forces of technological advances

More than money, the biggest challenge that India faces now and in the future is the shortage of skilled human resources required for steering the health system in a rapidly changing global environment. Everywhere, welfare states are giving way to market economies requiring skills to negotiate and deal with market dynamics. For a billion population, India has just a couple of health economists, biostatisticians, epidemiologists or public health managers having the requisite understanding of monitoring the liberalized environment, say, for clinical trials or insurance. Similarly, the acute shortage of skilled nurses, psychiatrists, anaesthetists, etc. is an emerging challenge, as will be the effective management of technological developments in medicine and increased consumer expectations. An ageing Indian population with health care needs similar to those of their developed country counterparts, and living in a globally interconnected setting, is likely to potentially demand the most recent technology in medicine, with direct implications for health expenditures. This will be even more so if, as is the case in the United States

Fig 1.6

Figure 6: HCR of Poverty in 1993-94 and 1999-2000 and Relative Decline in Nutritional and Official Poverty between the two periods, All India

Source : Extracted from Unit Level Record Data, 50th and 55th Round of CES, NSS



of America, the elderly become a politically potent force. The rules on intellectual property rights can potentially increase the costs of such technology transfers, as suggested by recent analysis of the effect of Trade-Related Intellectual Property Rights (TRIPS) on drug prices in India.

At the same time, there is the potential of harnessing technology towards improved surveillance, financial record-keeping in medical facilities and diagnostics via telemedicine. There is also evidence that initially expensive technologies may become less costly relative to health outcomes over time—the cost reductions in angioplasty procedures are an obvious example. India can also learn from health and pension system reform efforts that have been undertaken, or are currently under way, in several developed and middle-income countries.

Ageing population

As India progresses further into its demographic transition, it will increasingly be faced with an ageing population, which is likely to be sicker and more disabled, for which the Government has no strategy or specific capacity to meet the challenge. The proportion of the elderly (defined here as 60 years and above) in India's population is currently 6.9%, and is expected to increase to nearly 11.8% by the year 2025. The projected increase of the elderly dependency ratio—the ratio of the elderly population to working-age adults in future years—will have several implications. The elderly need greater health care facilities, which require higher health care expenditures than other population groups. The decline of traditional sources of support may well increase the onus on the public sector to provide support.

An ageing population need not contain only threats. Indeed, there is some evidence of 'healthy ageing' in India; while the average elderly individual is likely to be more disabled than a younger person, the disability rates among the elderly appear to have fallen during the 1990s.

Emerging disease burden

A fourth set of challenges are the emerging and re-emerging infectious diseases, which may become more significant in the future: the HIV/AIDS epidemic, the emerging epidemic of non-communicable diseases such as cardiovascular disease and cancers, mental health and, as India modernizes, road traffic accidents. These must be addressed simultaneously with conditions that have traditionally caused most of the morbidity and mortality in India, i.e. malaria, tuberculosis and childhood health conditions. Inability to address these conditions can set back India's meagre health achievements to date and its ambitions to become an economic powerhouse.

Tackling the current disease burden in an effective manner will therefore be the most critical focus for India for the next decade.

What Ails India? Disease Burden and Prioritizing Investments

Disease burden in India

Limited resources mean that not every health condition can be attended to, nor every intervention that improves it financially supported. How should then one decide which health conditions/interventions need priority policy attention? What is the state of scientific knowledge about the causal factors that underlie the spread of these conditions and the best strategies currently available to address them?

The Commission invited some of India's leading health experts to help answer these questions. The group identified 17 major classes of health conditions described in Table 1.3 in terms of their contribution to India's disease burden. Together, these priority conditions accounted for over 80% of the overall burden of disease in India in 1998, and ranged from maternal and child health conditions, various infectious and vector-borne diseases to major non-communicable conditions such as cardiovascular disease and cancers.

Three criteria were used to decide the list of priority health conditions:

- likelihood of the burden of a specific health condition affecting the poor disproportionately more such as airborne and waterborne infectious and vector-borne diseases;

Table 1.3

Disease Burden Estimations, 2005

Disease/Health Condition	Current Estimate of cases - 2005 / lakhs*	Projected number of cases, 2015/lakhs**
I. Communicable Diseases, Maternal & Perinatal Conditions		
Tuberculosis	85 (2000)	NA
HIV/AIDS	51 (2004)	190
Diarrheal Diseases episodes/yr	760	880
Malaria and Other Vector Borne Conditions	20.37 (2004)	NA
Leprosy	3.67 l (2004)	Expect to be Eliminated
IMR/1000 live births	63 (2002)	53.14
Otitis Media	3.57	4.18
Maternal Mortality /100000 births	440	NA
II. Non-Communicable Conditions		
Cancers	8.07 (2004)	9.99
Diabetes	310	460
Mental Health	650	800
Blindness	141.07 (2000)	129.96
Cardiovascular Diseases	290 (2000)	640
COPD and Asthma	405.20 (2001)	596.36
Other Non-Communicable		
III. Injuries- deaths	9.8	10.96
No. Hospitalizations	170	220

- in the absence of interventions, the probability of health conditions continuing to impose a serious health burden in future years; and
- the possibility of a health condition driving a sufficiently large number of people, not necessarily the poor, into financial hardship, including their falling below the poverty line.

Estimates and projections of priority health conditions and their economic impact

Exhaustive literature reviews suggest a paucity of high-quality epidemiological information on many of the major health conditions, making it possible to only arrive at some guesstimates under the three categories of diseases: communicable, non-communicable diseases, and injuries and accidents (Table 1.3).

As noted in Table 1.3, this category of health conditions that include HIV, tuberculosis (TB), malaria, diarrhoea, acute respiratory infections, maternal and perinatal conditions, accounted for nearly half of India's disease burden in 1998 and this share may actually increase in the future owing to HIV/AIDS.

Category I: Communicable diseases

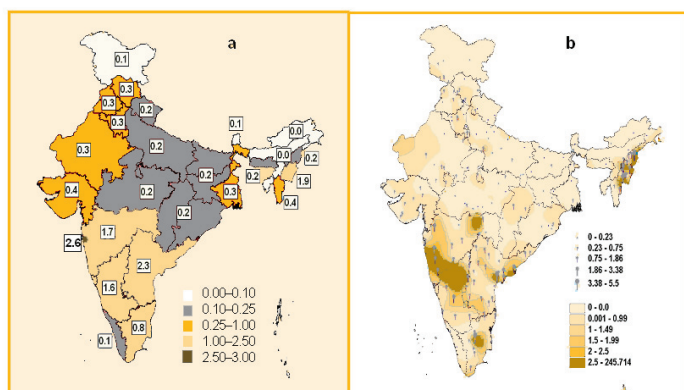
HIV/AIDS

Currently, the epidemic is largely concentrated in certain regions of the country and, within them, in certain identified pockets (Fig. 1.7). However, one needs to exercise caution in giving undue emphasis to these areas to the exclusion of others as the higher prevalence could also be the result of the availability of data through the surveillance sites. As the establishment of these sites is expanded to the whole country, a clearer picture will emerge.

Based on the surveillance data, it is estimated that there are 51 lakhs adults with HIV infection between 15 and 49 years. Even assuming a modest growth scenario of about 3% equilibrium prevalence in the age group of 15-49 years, an estimated additional 500 lakhs people are likely to become HIV-

Fig 1.7

State-level and focal area HIV-1 prevalence, 2000

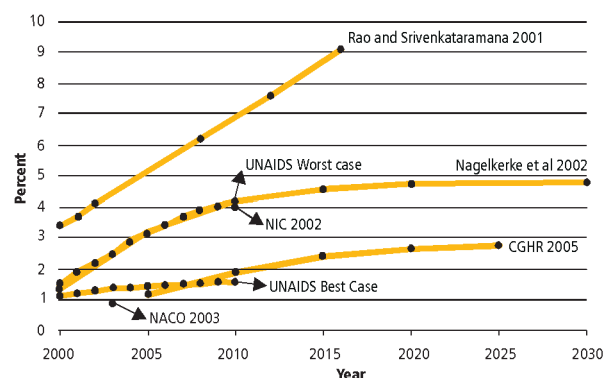


Source : Willams et al, 2005

Fig 1.8

Projections of the prevalence of HIV infection among adults in India

Source: Kumar 2005



positive by the year 2025; and some 150-180 lakhs by 2015. Figure 1.8 below gives different projections of HIV prevalence.

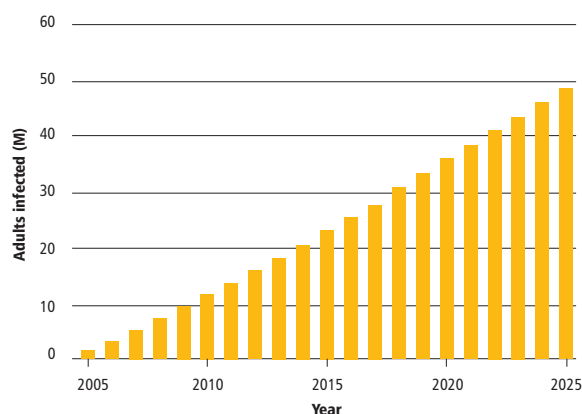
As can be seen from Fig. 1.9, the incidence of new infections is likely to be higher in 2015 than in 2005, with women having a two-fold higher incidence, largely due to female sex work as well as higher biological susceptibility of high- and low-risk women to HIV-1 infection. What is worrying is the projection of an increasing number of such infected women from among the low-risk category (Fig. 1.9a).

These huge numbers of people with HIV at any given point in time do not, of course, include people who may have previously died of AIDS-related causes, and thus provide only a partial picture of the cumulative future disease burden from HIV/AIDS. The large numbers of people currently living with HIV and likely to be infected in the future will have significant economic consequences at the level of households, and potentially even at the national level, because HIV/AIDS is heavily concentrated among working-age adults.

A recent study of persons covered by an NGO providing services to people with HIV found average work-day losses among them of up to 43 days per person over a six-month reference period, and income losses amounting to Rs 3000 over the same period per person. If multiplied over 50 lakhs HIV infected persons, it would translate to a loss of 50 crore work days and about Rs.3000 crores of wages. This study also suggests that nearly one-quarter of all households affected by HIV/AIDS had members who had to work extra to meet household income needs. Medical conditions associated with HIV are also extremely expensive to treat: out-of-pocket expenditure on treatment and services amounted to Rs 6000 per HIV-positive person over a six-month reference period and for clients on anti-retroviral treatment (ART), the expenditures were markedly higher; nearly Rs 18,150 per person over a six-month period. These expenditures constituted a significant economic burden on the affected households, with roughly 40%-70% of the expenditures being financed by borrowing. Another study from Delhi, although with a less scientifically designed sample, suggests similar estimates for expenditure on ART-about

Fig 1.9
Fig.9. Cumulative HIV-1 infections from 2005 to 2025 in India, in million

Source: Kumar, 2005



Rs 30,000 for a one-year period, in addition to Rs 10,000 annually for conducting monitoring tests.

In addition to the large economic impact of AIDS on average affected households in India, the epidemic will possibly disproportionately affect the poor and backward groups who are likely to be less well-informed about HIV and its causal mechanisms than the rich. There is some evidence suggesting that the prevalence of HIV among the economically worse-off groups in India is higher than in the better-off groups. When affected by HIV/AIDS, the poor will also be less well-equipped to cope with its social and economic consequences, owing to lack of access to financial resources, such as savings, physical assets, and credit on reasonable terms.

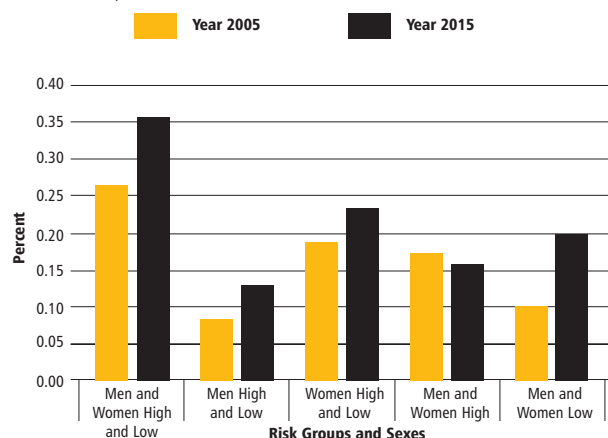
Tuberculosis

TB is the largest killer among adults in India, affecting those in the productive age groups disproportionately more than others. According to Tuberculosis Research Centre, an estimated 38 lakhs bacillary cases and 39 lakhs a bacillary cases, (totaling to 77 lakhs) were persons suffering from TB in 2000. In this estimation the possible association of HIV and multi-drug resistant (MDR)-TB are not included. An estimated 400,000 die of the disease each year. This makes TB the single most important cause of death in India at present. While no future projections for TB in India are currently available, we expect that an expanded HIV epidemic will greatly increase the numbers with active TB, by weakening the affected individuals' immune system in a population with high rates of M. tuberculosis infection.

The economic burden that a patient with TB can potentially impose on a poor family whose main source of earning is physical labour, is huge. For example, one study on 304 patients with TB found that the average cost of treatment over a six-month period amounted to nearly Rs 2000 with an additional Rs 4000 of lost wages during that period. Such expenditures mean 83 days of wage losses and a mean debt of Rs 2059 which, with interest added, could take the family years to redeem. Moreover, recent studies suggest that every year in India, an

Fig 1.9a
HIV-1 incidence by gender and risk group in India, 2005 and 2015

Source: Kumar, 2005



estimated 300,000 children leave school on account of TB afflicting either of their parents or both, forcing them to take up employment to provide an additional source of income. The economic costs of TB in India are estimated to be Rs 12,000 crore and a loss of over 10 crore productive days.

Reproductive and Child Health (RCH)

Maternal, perinatal and childhood conditions account for a significant percentage of the disease burden. The IMR is about 66 per 1000 live-births, a substantial improvement over the levels nearly 30 years ago. The under-five mortality rate (U5MR) was estimated at 95 per 1000 live-births in 1998-99, and is declining at a rate similar to that of the IMR. Two-thirds of deaths occur within the first week of birth. About 35 babies of every 1000 childbirths die within one month; 30 before one year and 26 between 1 and 5 years of age. In India the ratio of the neonatal death rate to the 1-5-year death rate is 1.3, against 10 in developed countries. Therefore, any strategy to reduce child deaths must focus on all three age periods, as focusing on any one may result in merely shifting the burden to the other.

There is a reported decline of the maternal mortality rate (MMR) from about 580 per 100,000 live-births during 1982-86 to 440 per 100,000 live-births in 1992-96. This rate is remarkably similar to the annual declines observed for the IMR and U5MR.

Unfortunately, there are few projections of the IMR, MMR and U5MR up to the year 2015. A simplistic set of projections that assume future rates of decline similar to those occurring in the recent past would imply that the IMR, U5MR and MMR would decline to 46, 62 and 250, respectively, by the year 2015. These forecasts ignore trends in, and interplay with, factors that underlie changes in the IMR, U5MR and MMR. While the projected rates are much lower than the current levels, they would be higher in 2015 than the levels needed to achieve the goals India is committed to under the Millennium Development Goals (MDGs).

It is well known that infant, child and maternal mortality are particularly high in poorer states, and among poorer families in India. Pure economic calculus also dictates that increas-

ing attention be paid to address maternal and child health. For instance, poor nutrition and ill health among children is likely to affect their health as adults, their accumulation of educational capital and, in turn, their future economic prospects. Less educated and less healthy individuals from poor families are more likely to end up in occupations such as manual labour, which may worsen their economic plight and economic standing relative to others. The adverse health and/or death of adult women can economically affect households in terms of increased expenditure on medical treatment; and by the temporary or permanent loss of a key household care-provider for the elderly, adults and children within the household.

Malaria

Malaria, dengue and some other conditions fall in the category of 'malaria and vector-borne diseases'. In 1998, these were estimated to account for 1.6% of India's total disease burden. This is likely to be an underestimate of the true disease burden of these conditions since reliable population-based data on these conditions do not exist in India and most information is 'reported' by officials, suggesting underreporting and incomplete reporting of data. Underreporting occurs when large numbers of patients visit private health care providers who are under no obligation to report cases to public health authorities, and when record-keeping and case-finding are done by poorly monitored employees who may receive incentives for underreporting to demonstrate the success of a programme. Household survey methods are also not very useful in filling any gaps in this regard, since many of these diseases, especially malaria, are likely to get recorded as unspecified 'fevers'.

Data show that the prevalence of reported cases of malaria (per 1000 population) declined in India from 1995 to 2003 but the proportion of *Plasmodium falciparum* cases, a serious form of malaria that is also expensive to treat, increased during the same period at the all-India level—from 38.8% in 1995 to 47.5% in 2003. With increasing resistance of the malarial parasite to available drugs, and without effective interventions, one may even see an increase in the disease burden from malaria in the future.

While malaria seems to be prevalent both in urban and rural areas and throughout the country in varying degrees, the areas having an annual parasite index (API) of more than 2 are estimated to be about 100 districts in eight states. Panel data regression techniques that could possibly correct for systematic cross-state differences in data reporting showed that an increase in per capita income of Rs 1000 is associated with a 0.4% decline in the prevalence of malaria, and an increase in the average rainfall by one additional inch, on the other hand, is associated with a 0.4% increase in the prevalence of malaria. In addition to this 'macro-evidence' that links economic well-being to malaria prevalence, there is also some micro-evidence at the level of communities and households, which demonstrates an association between the risk of malaria transmission and socioeconomic status. Two independent studies, one in the tribal communities of Orissa and another in the Kheda district of Gujarat, show that low socioeconomic status (manifested in location of

hamlets, outdoor activities, and inadequate knowledge about malaria prevention and treatment) was associated with higher rate of transmission of malaria. These studies also suggest that roughly 13 household man-days per patient are lost and the overall monetary losses (income losses cum treatment expenses) could amount to between Rs 200 and Rs 400 per episode of malaria.

Category II: Non-communicable diseases

This category accounts for the second-largest share, after communicable health conditions, of the disease burden in India and includes cancers, cardiovascular disease, diabetes, respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD), and mental health conditions. Available data suggest that these conditions will account for fairly sharp increases in India's disease burden in the future.

Cardiovascular diseases

Starting from a level of about 380 lakh cases in the year 2005, there may be as many as 641 lakh cases of cardiovascular disease (CVD) in 2015; and the number of deaths from CVD will also more than double with most on account of coronary heart disease—a mix of conditions that includes acute myocardial infarction, angina pectoris, congestive heart failure and inflammatory heart disease, although these are not necessarily mutually exclusive terms (Fig. 1.10). The rates of prevalence of CVD in rural populations will be lower than in urban populations, but will continue to increase, reaching roughly 13.5% of the rural population in the age group of 60–69 years by 2015. The prevalence rates among younger adults and women (in the age group of 40 years and above) are also likely to increase (Fig. 1.11). A crude estimate of mortality on account of CVD, which could throw some light on prevalence, also shows wide inter-state disparities; with Rajasthan and MP having higher mortality levels of 275 and 229 per 100,000 than Kerala and Karnataka, which were 187 and 175, respectively. Of course,

Fig 1.10

Burden of cardiovascular diseases in India

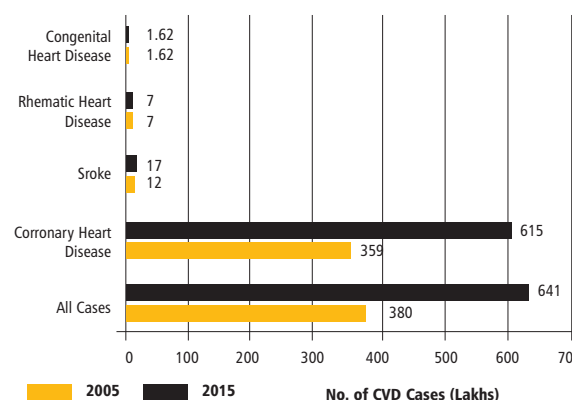
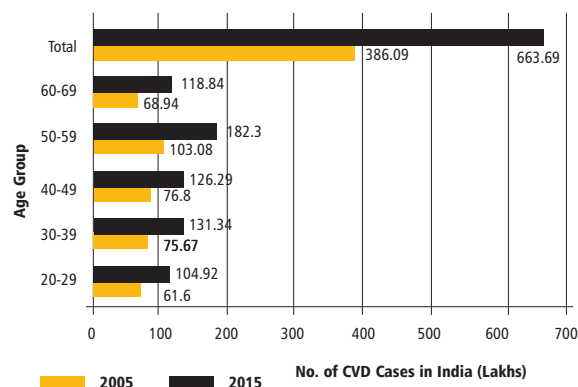


Fig 1.11


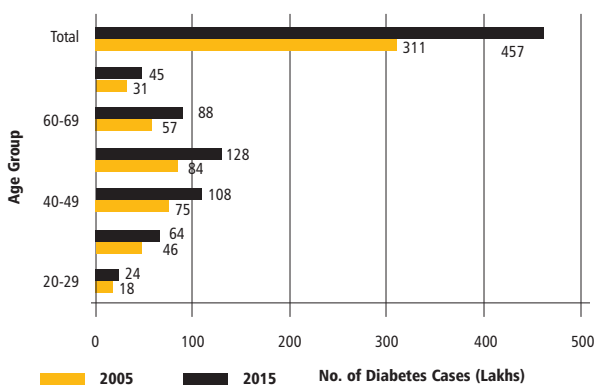
this differential could also be a reflection of access to medical attention.

Diabetes

Diabetes, also associated with an increased risk for CVD, is emerging as a serious health challenge in India, even though it accounted for only about 0.7% of India's disease burden in 1998. It is estimated that there may be a significant load of diabetes cases in India—rising from 310 lakhs in 2005 to approximately 460 lakhs by 2015, and particularly concentrated in the urban population. The data also reveal that the prevalence of diabetes is 6% in the 30-39 years age group, rising sharply to 13% in the 40-49 years age group, and to nearly one-fifth of the population 70 years and above. Its prevalence among women above the age of 40 years is high. (Fig. 1.12)

Fig 1.12

Burden of Diabetes in India

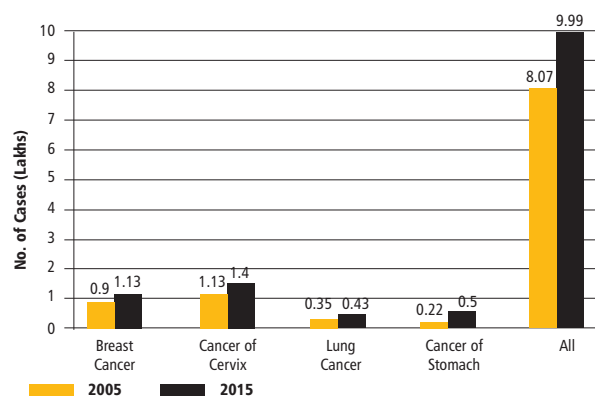


Cancers

Cancers refer to a group of diseases associated with uncontrolled cell growth that can affect normal body functions, often with fatal outcomes. In India, cancers account for about of 3.3% of the disease burden and about 9% of all deaths. These estimates will, however, surely change as many of the common risk factors for cancers, such as tobacco and alcohol consumption, continue to become more prevalent in India. It is estimated that the number of people living with cancers will rise by nearly one-quarter between 2001 and 2016. Nearly 10 lakh new cases of cancers will be diagnosed in 2015 compared to about 807,000 in 2004, and nearly 670,000 people are expected to die (Fig. 1.13).

Fig 1.13

Disease burden in India due to cancers



Mental health disorders

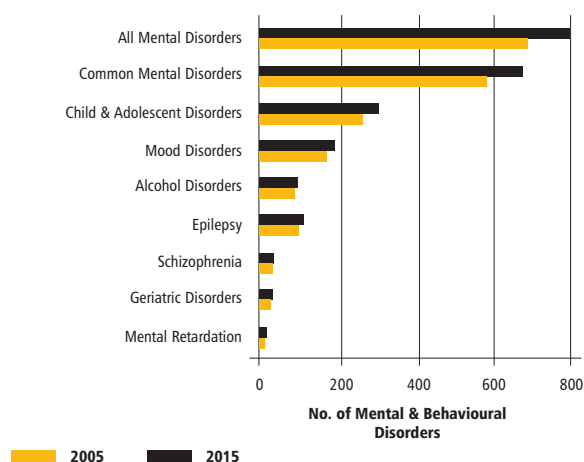
Nearly 650-700 lakhs people in India are in need of care for various mental disorders in all age groups. This estimate excludes a large group of common mental disorders like phobia, anxiety, disassociative disorders, panic states and mild depression and substance abuse (varying spectrum of associated hazardous use) Fig. 1.14. It is difficult to establish the true burden of all these disorders but has been estimated to be nearly 205 lakhs people. Alcohol related problems are increasing in India — nearly 620 lakhs people — predominantly men — are likely to be current alcohol users with nearly 102 lakhs being alcohol dependants and alcohol users are about 300 lakhs people.

States with large populations in rural areas like Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, etc., face a heavy burden of the problem. This also needs to be seen in context of low levels of literacy, income and access to care. Predominantly the age group of 25 – 44 years, except those specific to paediatric and geriatric age groups, are most vulnerable to mental health challenges. The productive states of individual in this period of the life cycle leads to severe degrees of unproductivity and its spiraling effects on quality of life with associated stigma. Certain mental illnesses will manifest more in women, like unipolar depression is higher among women in

15- 44 yrs, while schizophrenia and other mood disorders are more among men. Alcohol dependency and its hazardous use, drug abuse is exceptional to men. Increasing trends of its common usage among women in both urban and rural areas has been a recent phenomenon (1%-5 %).

Fig 1.14

Disease burden in India due to psychiatric illnesses



Though poverty and deprivation enhance the vulnerability to mental illnesses, other factors like homelessness, unemployment or underemployment have been specifically documented as increasing the vulnerability. 'Barriers to appropriate care' have been several; with 'stigma' being a major impediment to access care, and cultural practices a major hindrance leading to many hazardous practices and neglect of those with mental illness.

Poor utilization of services even where care is available emerges as a major concern. The treatment gap for different disorders in India indicates that 70 to 80% do not receive appropriate and adequate care. Many non-pharmacological methods including Indian therapies like yoga and meditation are emerging as part of the therapeutic treatment. Hence, a combination of approaches and methods are currently recommended, based on individual and family needs. Community and family integration has now come to be known as a powerful tool. Non-governmental agencies across India since 1980's have shown that integration of mental health with primary healthcare, training health functionaries, making essential drugs available and simple managerial skills of supervision and monitoring is an effective approach amidst resource constraints.

Asthma and chronic obstructive pulmonary disease (COPD)

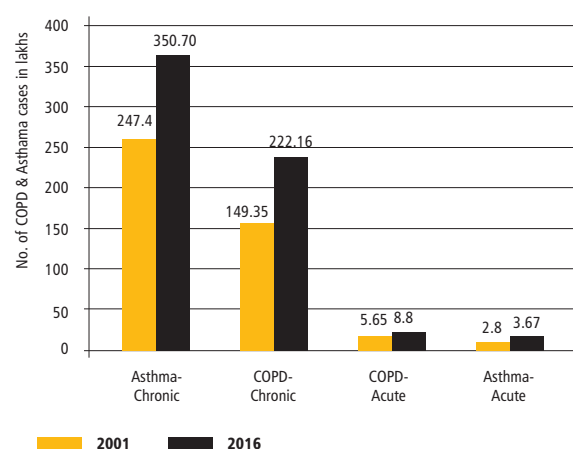
Two other important non-communicable conditions of concern are COPD and asthma. COPD refers to a group of disorders that are persistent and largely irreversible, such as chronic bronchitis and emphysema. It is associated with an abnor-

mal inflammatory response of the lungs to noxious particles or gases, especially tobacco smoke and air pollution, both indoor and outdoor. Asthma is a chronic disease of the airways, characterized by sudden attacks of laboured breathing, chest constriction and coughing. Although asthma can occur at all ages, in roughly about half of all cases it occurs before the age of 10 years. It is estimated that there were roughly 1.5 crore chronic cases of COPD in the age group of 30 years and above, and 2.5 crore cases of asthma in 2001 in India. These numbers are projected to increase by nearly 50% by the year 2016, including 'severe' cases, some of whom may require greater levels of care, including hospitalization.

Figure 1.15 shows the large number of the poor who suffer from COPD and asthma, respectively. Given the high cost of treatment, the level of impoverishment this disease causes is substantial.

Fig 1.15

Burden of disease in India due to Asthma and chronic obstructive pulmonary disease (COPD)

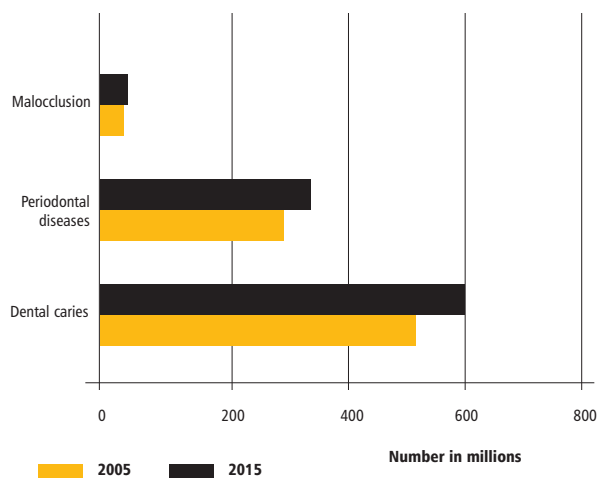


Oral & dental diseases and Blindness

Data on the current prevalence and future projections for blindness indicate that the number of cases of blindness is expected to remain more or less the same during the next two decades. The projection, however, is based on extremely optimistic projections of cataract treatment that may not be realized, in which case, blindness can also be expected to increase sharply in the future. The number of cases of the various oral health conditions is expected to increase by 25% over the next decade. The disease burden in India due to dental and blindness disease is given in Fig. 1.16 & 1.17.

Economic correlates of non-communicable disease burden

The set of health conditions described above are consequential in terms of numbers and the financial well-being of the people affected by them, especially the poor. A select set of examples illustrate the economic consequences of some of

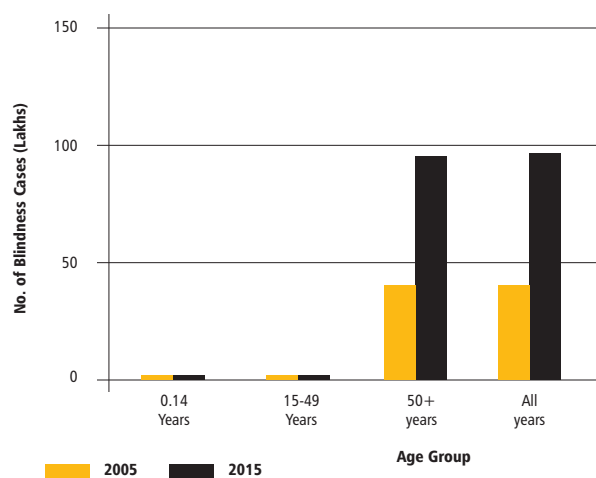
Fig 1.16
Burden of dental diseases in India


the health conditions discussed above, particularly the economic burden faced by poorer groups.

There is limited direct evidence available in India on the risk of non-communicable diseases, by socioeconomic status. However, what we do know suggests that the poor are no less at risk: the prevalence of CVD in rural areas is increasing at a fairly rapid rate. In that sense, the rural poor may, ultimately, not be able to evade its impact. Research undertaken by the NCMH using National Sample Survey (NSS) data for various years shows that the poorer and less literate groups are likely to consume more tobacco and smoke more on a per capita basis, which is linked to a higher risk of CVD, cancers and COPD. Analyses of NSS data also suggest that the prevalence of individuals reporting illness owing to 'cough and acute bronchitis' was distributed quite evenly across expenditure quintiles, so that the poor are unlikely to be especially protected from COPD. In fact, the circumstances may be much worse if, as we expect, poorer groups live and work in surroundings where they are particularly likely to be at risk from indoor and outdoor pollution, while simultaneously under-reporting such conditions. For instance, women in poorer households are more likely to rely on biomass fuels for cooking, which has been associated with increased risk for respiratory disease. Even less information is available on the socioeconomic distribution of mental disorders, which are likely to be highly stigmatized.

Non-communicable diseases can also be extremely expensive to treat and clearly unaffordable for a majority of the country's population, particularly in the absence of any health insurance mechanisms and low public funding for health. Given that nearly 58% of hospital stays associated with cancers were at public hospitals, and another 6% at charitable hospitals, where health care is likely to be heavily subsidized, one can imagine what the potential financial consequences could be for households in the absence of such facilities. Stress and psychological costs to the person and his/her family members, or work-days lost, would be over and above this amount.

Table 1.4 captures estimates of household expenditures/treat-

Fig 1.17
Fig. 15. Burden of Blindness in India


ment costs per episode per year and the implication in terms of hardship to a poor family meeting the expense out of pocket.

Category III: Accidents and injuries

Data from Survey of Causes of Death and Medical Certification of Causes of Deaths reveals that 10-11% of total deaths in India were due to injuries. It is estimated that nearly 8,50,000 persons die due to direct injury related causes every year in India during 2005, with 170 lakh hospitalizations and 500 lakhs requiring hospital care for minor injuries. By 2015, the toll is expected to rise to 1,096,789 deaths and 219 lakhs hospitalization and 530 lakhs minor injuries in the absence of any positive intervention. While official reports capture majority of these deaths, domestic and occupational injuries, falls, drowning, animal bites and injuries in disaster are generally never reported/underreported or are misclassified.

It is also estimated that nearly 60 lakh persons live with disabilities due to injuries, accounting for one-third of dis-

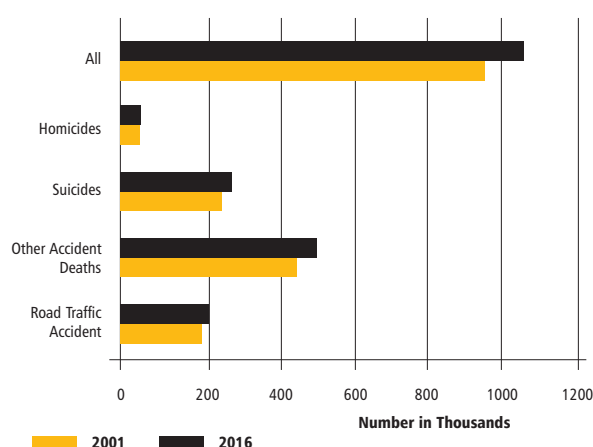
Table 1.4
Estimates of household expenditures/treatment costs per episode/per year in India

Disease/Condition	Estimated cost of treatment of one episode/per year (in Rs)	In terms of days of wages lost to BPL families
Heart disease	11,000	333
Diabetes with insulin	5,000	100
Cancer	15,000	454
Acute case of COPD	32,000	969
Moderate asthma	16,200-20,600	624
Mood or bipolar disorders	3000-6000	182
Major cases of injury	9000	273

abilities, although majority of these injuries and resulting disabilities are predictable and preventable. Moreover, two-thirds of total injury and disabilities are caused by road traffic injuries, suicides, violence, burns and poisoning. Tragically, nearly 75% of injuries and deaths occur in the age group of 5-44 years, and roughly 80% of the injuries occur among men, while women and children bear the impact of problem. The estimated economic loss due to injuries would be around 5% of GDP in recent years. Thus, the share of injuries in India's disease burden is likely to exceed considerably its share in the overall mortality, as suggested in Fig. 1.18.

Fig 1.18

Share of injuries in India's overall mortality



There are strong reasons to suspect that several categories of injuries are not distribution-neutral, and are more likely to adversely affect women and the less well-off. Examples include child labour and low-paid workers in the agriculture and unorganized sectors, where industrial regulations either do not exist, or are routinely flouted, so that injuries are more likely; and the fatality risk from road traffic accidents is particularly high for pedestrians and drivers of two-wheelers relative to those in cars. Injuries are sometimes not gender-neutral. Indeed, women have disproportionately high rates of suicide and burn injuries in India, a number that may well include dowry deaths, and as the National Family and Health Survey of 1998-99 suggests, cases of domestic violence more generally.

Identifying cost-effective interventions for preventing disease and promoting positive health values

Key interventions that will yield the maximum possible gains in population health outcomes, given the cause of different diseases/health conditions and also the financial resource constraints discussed below are based on the summary of a causal analysis of different diseases/health conditions².

Improvements in population health outcomes are an important goal of health policy, but so is protection from the financial risk associated with illness. Thus, compared to cancers, diarrhoeal diseases impose a much greater disease burden in India at present, but the former obviously imposes a much greater financial risk on affected households. This then justifies the urgency to avoid and prevent the onset of these diseases to the extent possible. Absence of research data, however, inhibits any attempt to correlate a causal connection between the intervention and the extent to which morbidity or mortality can be reduced. Such data would have helped in prioritizing interventions. Given this circumstance, we take the position that an ideal health intervention ought to have the following two key properties:

- It is technically effective in substantially ameliorating a major health problem – in other words, has the potential to markedly reduce disease burden; and
- Relative to the outcome gains achieved, it is financially inexpensive; instead, it is cost-effective.

Together there is scope to focus on several extremely cost-beneficial and cost-effective interventions that yield large gains in health outcomes. In narrowing down such a list of supportable interventions, we focus on mortality gains likely to be achieved, as mortality accounts for a substantial proportion of the disease burden, and the disability and morbidity effects of a disease are highly correlated with its mortality effect.

Given the probability of death beyond, say, 70 years tending to be high, the largest gains in mortality reduction are likely to be achieved at younger ages. It has been shown that whereas 18% of all Indians can expect to die before the age of 40 years, only 2% of residents of the UK expect to do so. A similar, but less marked, difference exists in 'middle age' – with 51% of all Indians expected to die before the age of 70 years, compared to 23% for residents of the UK. Beyond 70 years of age, the differences in the likelihood of survival are even less sharp between the two countries.

There are significant differences in infant and child mortality across developed countries and India. Even within India, there are some States that have done well relative to others. Thus, an IMR of 14 for Kerala is substantially smaller than the 96 for Orissa, and while at least 5 Indian States have an IMR above 75, others such as Tamil Nadu have much lower rates. Thus, large reductions in the IMR appear feasible even within resource-poor settings as in India and, given Bangladesh's advances in recent years, rapidly so. If the achievement of an IMR of about 26 per 1000 (double the rate achieved by Kerala) implied by the MDGs were to come about, it would enable India to avoid nearly 1 million infant deaths per year, with huge reductions in the overall disease burden.

How are declines in infant and child deaths to be achieved? While antenatal care makes a significant difference to a child's survival prospects – the survival chances of a newborn whose mother received tetanus injections during pregnancy are much higher than one whose mother did not – professional attendance, presumably with some back-up access to a higher

² The detailed List of Causal Analysis - direct, indirect and proximate for all the 17 diseases are in the companion volume related to Burden of Disease in India.

level of care during childbirth, is associated with a substantial reduction in the neonatal mortality. Similarly, an undernourished child is more susceptible to diarrhoeal diseases and respiratory infections which, if untreated, can be fatal. This may require a reversing of practices such as premature termination of breastfeeding, and measures to improve maternal nutrition to provide sufficient amounts of breast milk to the infant. Beyond the phase of infancy, immunization becomes critical in warding off potentially fatal conditions—the existing enormous cross-State variations in immunization rates and the low rates of immunization in several States suggests great potential for reducing mortality from vaccine-preventable conditions. Overall, the gains from these interventions can be potentially massive. Our estimates indicate that a reduction in childhood mortality by 50% can, in the absence of mortality from competing risks, raise the life expectancy at birth (LEB) of an Indian by as much as 3.1 years. In light of the existing literature on the links between health and economic growth, this may well be associated with a GDP level that is 4% to 12% higher, although further work is obviously needed to flesh out the causal links between health and economic growth.

Box 1.2

Guineaworm is a disease of the poor, debilitating them at the busiest agricultural season. Primary intervention of the campaign against this disease included the provision of safe water, health education and case containment, management and surveillance. Globally in the early 80's an estimated 3.5 million people in 20 endemic countries in Africa and Asia were infected with guineaworm and 120 million were at risk. By 2003, less than 35,000 cases were reported with about 3 countries reporting more than 1000 cases. The total cost of the program between 1986 and 1998 was \$ 87.4 million with a per case cost of \$5-8. The economic rate of return based on agricultural productivity alone has been estimated at 29%. Eradication of this disease in India was a successful model of international collaboration aimed at behaviour change. India launched the campaign in 1986 and eradicated the disease in 1996, bringing down more than 30,000 deaths to nil.

All the above from Million Saved - Proven Successes in Global Health - Center for Global Development by Ruth Levine and the What Works Working Group. CGD, Washington, 2004

Of course, if feasible, 'eradication' may offer even greater economic returns than immunization. Smallpox is a good example to recall. The world spent an estimated US\$ 250 million to eradicate smallpox, which is saving the world almost US\$ 1 billion of expenditure that it would have had to incur on smallpox vaccination every year (Gates 2004). Likewise, if we can eradicate polio, we would be able to avoid spending Rs 800 crore annually in perpetuity, offering a present value of gross benefits of Rs 8000 crore to Rs 16,000 crore, depending on the discount rate adopted of 10% or 5%. These gains would be even greater if averted costs of personnel time were also included. But then, as the country gets closer to eradication, finding additional cases until complete eradication is achieved is incrementally more expensive and second, the health care system also needs to be adequately capable of sustaining these gains, drawing atten-

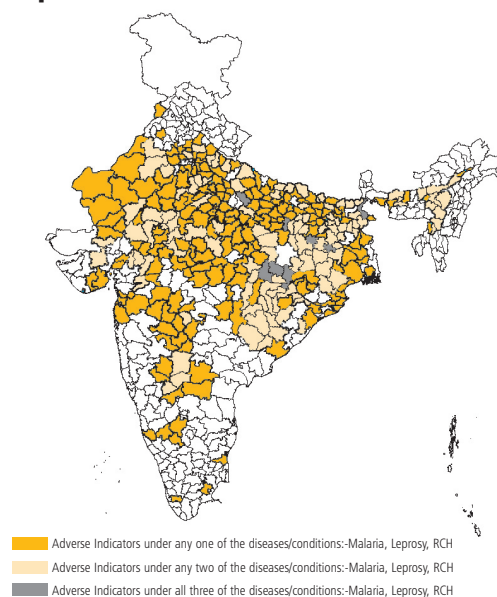
tion to why the state of the health care system in India is a subject of urgent concern.

Apart from these medical and nutrition interventions, there are candidate interventions that have less of a health focus. Many cultural practices, particularly against females are likely to be slow to change, but need to be continued. These include addressing discriminatory practices towards the girl child to help reduce sex disparities in child mortality, enhanced schooling of females which is associated with a lowered IMR, better roads that enhance access to health facilities on account of neonatal and post-neonatal infections, and access to clean drinking water, electricity and other infrastructure. Available evidence suggests that clean drinking water has a strong beneficial effect on the IMR and general health such as the eradication of guineaworm in India, which affected the poor in the Indian states.

Socioeconomic indicators, such as access to water, sanitation, female literacy, were analysed in 321 districts with reference to leprosy prevalence levels of more than 5/10,000 population; malaria of more than 2 API and poor RCH indicators. The data showed that 276 districts had poor RCH outcomes; 65 had high levels of leprosy; 96 were malaria-prone and less than 10 districts indicated an adverse scenario among both socioeconomic and the three health indicators (Fig. 1.19). The map below brings out the disparities and shows that if we focus on these districts, the gains for the country as a whole could be substantial. It also shows that in such districts, the focus will have to be intersectoral and comprehensive covering access to water, sanitation, nutrition and literacy with the same zeal as leprosy, malaria or child health. In other words, in such districts, a narrow disease focus strategy will not work.

Fig 1.19

Relationship between socioeconomic indicators and three diseases/conditions-malaria, leprosy, and reproductive and child health



Interventions directed towards adolescents and young adults (less than 40 years)

Given a child mortality of about 95 per 1000 live-births and the likelihood of 18% of all Indians dying before the age of 40 years, about 8.5% of a cohort born in any given year can expect to die between the ages of 5 and 40 years. In contrast, in the UK, the corresponding figure is 1.5%.

Several factors contribute to this difference. High MMR, HIV infection, TB, malaria, injuries, especially road traffic accidents, and cancers, particularly oral. All those affected are from the productive age group of less than 40 years. The rates of TB and HIV infections are also expected to increase sharply, the former a possible consequence of both HIV and smoking patterns, and the latter a consequence of predominantly risky heterosexual activity and the factors that promote it—mobile populations, rising incomes and income inequality, the low status of women and the presence of high-risk vulnerable groups. Evidence from India as well from developed countries suggests that the per capita traffic accident fatalities tend to increase during the early stages of development, and India seems to be on the upward sloping segment, with US\$ 8500 per capita being about the rough threshold when traffic fatalities start declining.

Cost-effective interventions to reduce MMR range from the presence of skilled attendants at the time of birth, involving a combination of personnel, drugs and back-up emergency care, better nutrition, good antenatal care and tetanus toxoid injections during pregnancy. Several non-health interventions can also help to reduce the MMR: age at marriage and enhancement of women's status in society, which may be associated with improved nutrition and education. Unfortunately, changes in these 'cultural characteristics' occur slowly over time, and cost-effective interventions to influence these characteristics are not readily identifiable. However, they must form part of a broad multisector strategy to address maternal and neonatal mortality.

HIV infection and other sexually transmitted disease

Cost-effective interventions to address HIV infections include preventive interventions that focus on high-risk vulnerable groups such as sex workers, truck drivers and injecting drug users, and addressing risks through blood transfusions. Mathematical models of HIV transmission and the experience of Africa and Thailand highlight that focusing on preventive strategies that include peer education, access to condoms, a climate of destigmatization, and treatment of sexually transmitted diseases (STDs) in vulnerable groups is likely to be effective during the earlier stages of the HIV epidemic. It is conservatively estimated that Thailand's prevention strategy with regard to AIDS may have yielded real rates of economic return of between 37% and 55%. Thailand also spent US\$ 45 million every year on TV airtime alone to propagate HIV messages.

Another preventive intervention is the use of antiretroviral drugs to reduce the risk of mother-to-child transmission of

HIV infection. Since this intervention must go hand in hand with diet supplements (in lieu of breast milk that may also lead to transmission of HIV) and because these drugs are expensive, such an intervention may be less cost-effective and difficult to implement than the ones cited above.

Should the treatment of HIV infection be promoted? Unless accompanied by a prevention strategy, there is a potential risk of HIV transmission increasing on account of increased life-spans of people affected by HIV. Since the typical increase in life-span on account of antiretroviral treatment (ART) is also limited, the cost of treatment is high for India, about US\$ 280 per life-year saved. If accompanied by a large-scale increase in prevention practices, this cost can fall sharply to US\$ 50 per life-year saved, although even this seems high compared to other health interventions. In a regime of limited resources, a purely cost-effectiveness calculus would militate against ART programmes. It is estimated that the cost of treating a person with antiretroviral drugs for one year can prevent as many as 50 new cases of HIV in India. There will surely be a need to address the adverse financial implications for families of people with HIV and that may require some extension of ART programmes, together with micro-credit access and technical support to enhance the economic well-being of affected households.

Table 1.5 indicates the estimated percentage of HIV infection that can be averted through various interventions. It makes it clear that focusing on preventive strategies may still be the best option for India.

Tuberculosis

There are three cost-effective interventions that can greatly reduce the mortality due to TB among adults and the transmission of *M. tuberculosis* more generally: vaccination against TB infection; effective identification of smear-positive cases of TB before they can infect others; and the treatment programme. It is estimated that directly observed treatment, short-course (DOTS) is reducing case-fatality rates resulting from smear-positive TB by 9% per annum.

TB is a disease of poverty—malnutrition, poor housing conditions, poor workplace environment are causal factors that need to be addressed to prevent TB in the first instance. Improvement in the socioeconomic conditions in the UK at a time when there was no chemotherapy available, is evidence of the association between economic development and TB. In addition to these conditions, of equal and immediate concern to India are the increasing numbers of HIV-associated TB cases as well as the potential increase of MDR-TB, calling for changes in design of service delivery that would be more acceptable to those affected by TB. Likewise, focused strategies should be developed among high-risk occupational groups such as quarry workers, in whom it is now proven that silicosis is a causal factor of TB.

Malaria

Although the reported cases of malaria have been falling, it continues to pose a threat to mortality among young adults.

Table 1.5

Percentage of new HIV-1 infections avoided in India with various interventions over the next two or three decades

Interventions	Nagelkerke et al. 2001/02	CGHR 2004(%)
Preventive interventions		
75% consistent condom use by Female sex workers (FSW)	-83%	-38%
30% reduction in the transmission of sexually transmitted infections (STIs)	-48%	-39%
50% reduction in mother-to-child transmission	-6%	-
40% reduction in commercial sex work by 15-year-olds entering the adult population	-	-39%
Hypothetical: no commercial sex work	-	-90%
Hypothetical HIV-1 vaccine with 50% effectiveness, 95% coverage of:		
General population with no adverse behaviour change	-57	-
Female sex worker with no adverse behaviour change	-61	-
General population with full adverse behaviour change	+13	-
Female sex worker with full adverse behaviour change	+27	-
Treatment: Antiretrovirals with 50% coverage in the general population and no adverse behaviour change	-19	
Source: Kumar 2004		

While nearly 25,000–30,000 die of malaria each year, there is evidence that the *P. falciparum* parasite has developed resistance to several drug regimens previously used to treat it. At present, three interventions are being used to address malaria: (i) use of insecticide-treated bednets—there is, however, no India-based evidence of its efficacy; (ii) indoor residual spraying—though of little value if the vector is found mostly outdoors, as in rural areas; and (iii) case management, which is of value as antimalarial drugs are still inexpensive. Improved malaria surveillance could be cost-effective in areas where epidemics occur among populations that are not resistant. In India, surveillance systems are weak, with a lot of underreporting, and require building partnerships with the private sector (see also Box 1.3).

Box 1.3

ICMR studies carried out to assess the efficacy of integrated strategies comprising of low cost interventions such as larval controlling fish, elimination of larval breeding grounds in domestic storage areas, community participation in prevention of breeding /larval control and engineering works such as leakage repairs, introduction of hatcheries etc. compared to the routine control measures of fogging, chemical larviciding and general health education showed that the integrated strategy reduced malaria incidence and population densities of *An.stephensi* and *Aedes* species more effectively than the routine. Besides, the per capita operational cost of the integrated strategy was Rs 8 compared to Rs 9.3 of routine control (at 2000 prices). Thus, integrated control measures indicated scope to reduce use of insecticides, improve the urban environment, decrease school absenteeism, generate community awareness and assure sustainability over the long term.

Smoking and tobacco use

Huge gains in mortality reduction among young adults are likely by reducing smoking and tobacco use. Data show that nearly 40% of Indian males smoke. Tobacco consumption and smoking have been linked to lung and oral cancers and, of late, to TB. It is estimated that the cost of tobacco-related

Box 1.4

Smoking causes an astonishingly long list of diseases, leading to premature death in half of all smokers. A study in India has found that 50% of TB deaths on account of smoking and may well be increasing the spread of infectious TB. While active smoking causes cancers and cardio vascular diseases, passive smoking contributes to respiratory illnesses among children and among pregnant women, contribute to sudden infant death syndrome, low birth weight and intrauterine growth retardation. The poor are more likely to smoke than the rich and therefore, health impacts of smoking is also disproportionately higher among them.

CGD,2004

diseases in India in 1999 was Rs 278 billion, rising to Rs 309 billion at an 11% growth rate. Cost-effective interventions to address smoking include: banning tobacco product advertising, enhanced taxes on cigarette sales and production, dissemination of health messages imposing absolute bans of smoking in public places, etc. It is well known, from United States data, that an increase in prices (including due to taxation) will reduce cigarette consumption. Tobacco is reported to be a causal factor for over one-third of CVD. It is estimated that a 50% reduction in CVD mortality rates can raise the LEB of an average Indian by 1.3 years and India's GDP by about 2%–5%.

Accidents

Road accidents are another major killer of young, and often poor, adults in India. Many of the measures to address accidents and their impacts lie in realms outside the health sector, and may have to do with urban planning, road designs (including pedestrian and bicyclist access), vehicle quality and design features, driving skills, non-use of helmets and poor control of speed. These require improved regulatory design as well as better enforcement of the law against violators of traffic rules. Attention needs to be paid to alcohol consumption among drivers as estimates for Bangalore suggest that 35%-40% of all accidents were alcohol-related, while for Haryana and Punjab it is nearly 40% of truck-related accidents and 60% of accidents involving cars. Along with health messages, interventions to address alcohol consumption may include tax increases, since price elasticity of demand for alcohol in India appears to be high. Absolute bans may have some efficacy, given the survey data of Gujarat, where consumption is lower than in other states. India's experience shows that any potential health gains from bans will have to be traded off against adverse impacts in the form of alcohol smuggling, and use of inferior products to manufacture alcohol illegally, with adverse consequences for health, including death, which may be cost-ineffective.

Little is known about the impact of legislation for seat belt use and its cost-effectiveness in India, although the international evidence on the impact of seat belts is uniformly positive. One recent study supported by the National Highway and Traffic Safety Administration (NHTSA) in the United States confirmed long-standing findings that seat belt use reduces the likelihood of fatality from an accident for front-seat occupants by 45% for cars, and 60% for trucks, relative to their unrestrained counterparts. Widespread provision of trauma care facilities may not be as cost-effective and such services may best be provided at a referral health unit. On the other hand, training lower-level staff at health facilities and the community in the management of fractures and other injuries, backed by appropriate referral does appear to be a potentially cost-effective strategy.

Interventions directed towards middle-aged and older persons

While several of the conditions that affect younger adults, such as TB and many types of cancers, are particularly likely to strike middle-aged and older individuals, it is less clear what other cost-effective interventions might address the needs of this group. Data from cancer registries in India clearly point to a much higher prevalence of oral and lung cancers among those in the middle ages and the elderly, relative to their young adult counterparts.

Moreover, this group is also at high risk from CVD. As obesity, hypertension and diabetes are linked to the onset of CVD, strategies that might be cost-effective include health education programmes that promote exercise and weight reduc-

tion; screening for hypertension; early treatment, education and screening programmes for cancers, and reduced smoking. Selective taxation of foods is another possibility, but may be politically difficult to execute.

The actual treatment of cancers and procedures for CVD (angioplasties and cardiac artery bypass graft [CABG]) are considerably less likely to be cost-effective, although their adverse financial implications to affected households could be extremely large.

Other health conditions (including mental health) and service provision

There are health conditions that might be associated with significant morbidity/disability even if their mortality implications are limited. Of particular concern in this regard are mental health conditions, oral and dental health, otitis media and gastroenterological conditions. For these conditions, relatively cheap interventions, either for prevention or for treatment, are available.

Overall, the impact on GDP and life expectancy by reducing mortality can be quite substantial. Table 1.6 summarizes such an impact for a few select conditions.

Table 1.6

Impact on GDP and life expectancy at birth of a 50% reduction in mortality in selected health conditions in India

Health condition	Gain in life expectancy at birth	Percentage change in real GDP	
		Bloom-Canning-Sevilla method	Duraisamy method
Childhood	3.09	12.4	4.3-9.7
CVD	1.27	5.1	1.8-4.0
Tuberculosis	0.12	0.5	0.2-0.4
Traffic accidents	0.11	0.4	0.2-0.3
All	4.59	18.4	6.4-14.4

Source: Calculations based on (a) An association between life expectancy at birth and GDP from estimates of aggregate health production functions in Bloom, Canning and Sevilla (2004) and Duraisamy (2005) [while causality is often difficult to establish from cross-country or cross-state estimates of health production functions, an underlying implication of causality running from health to output appears to be natural interpretation]; (b) A 50% reduction in mortality in each health condition listed; (c) linking age-specific and condition-specific mortality (and reduction) to life expectancy at birth via the most recent life tables for India, and (d) assuming no competing age-specific mortality risks in deriving life tables from mortality reduction. Age-distribution of deaths and total deaths for CVD, Tuberculosis and Traffic Accidents were obtained from Health Information for India 2003; Indrayan (2005); and Gururaj (2004).

Second, an important element of the intervention strategy must be to identify the mechanism through which such services are to be delivered³. A detailed schematic framework on how some of the preventive and curative interventions are to be provided at different levels of care—at the community level, sub-centre level, primary health centre, community health centres (CHC), and ultimately, at the district hospital was developed with the help of the experts. Such catego-

³ The detailed table of the schematic framework of functions and services that are to be carried out at different facilities is given in the companion volume on the burden of disease in India.

rization of service delivery depending on the intensity of resources required helped cost the budget and the nature of

infrastructure required to be located.

SECTION II

**India's health system: The
financing and delivery of
health care services**



India's health system: The financing and delivery of health care services

The existing health structure has an evolutionary and organic history. India's health system can be categorized into three distinct phases:

- The first phase, 1947-1983, when health policy was assumed to be based on two principles: (i) that none should be denied care for want of ability to pay, and (ii) that it was the responsibility of the state to provide health care to the people. With meagre resources, this period saw the effective containment of malaria, bringing down the incidence from an estimated 75 million to less than 2 million, the eradication of smallpox and plague, the halving of maternal mortality, reduction in infant mortality from 160 per 1000 live-births to about 105, containment of cholera and increase in longevity to almost 54 years. These gains were in no small measure due to the professional cadre of public health specialists leading from the front, camping in villages in hostile environmental conditions, whether to eradicate smallpox or supervise the malaria worker.
- The second phase, 1983-2000, saw the first National Health Policy of 1983 that articulated the need to encourage private initiative in health care service delivery. At the same time access to publicly funded primary health care was expanded. This phase thus witnessed an expansion of health facilities for providing primary health care in rural areas and the implementation of National Health Programmes (NHPs) for disease control under vertically designed and centrally monitored structures. Fiscal stress also forced states to innovate and this phase witnessed wide-ranging experimentation for increasing accountability and efficiency in resource use. (Table 2.1).

Box 2.1

India, unlike China, missed the opportunity to launch public health campaigns to promote community-wide efforts alongside making adequate investments in water, sanitation, nutrition and education. Instead, India focused only on family planning and failed to utilize the strengths of traditional medicine in health care.

For meeting the growing demand for hospital care, substantial subsidies were extended to the private sector. The twin strategy however failed due to serious omissions in public policy: (i) the failure to establish a regulatory framework and accreditation processes for governing the private sector; (ii) the absence of a surveillance and epidemiological system resulting in poorly designed health interventions; and (iii) inadequate investments in developing skilled human resources.

- The third phase, post-2000, is witnessing a further shift that has the potential to profoundly affect the health sector in the country in three important ways: (i) the desire and need to utilize private sector resources for addressing public health goals; (ii) liberalization of the insurance sector to provide new avenues for health financing; and (iii) redefining the role of the state from being a provider to a financier of health services as well.

Overall, the principal challenge for the health system continues to be the improvement of the health status of the people in a sustained manner. Despite States attempting several innovations, the health system continues to be unaccountable, disconnected to public health goals, inadequately equipped to address people's expectations and fails to provide financial risk protection to those unable to access care for want of ability to pay. Despite huge investments in expanding access, a villager

Table 2.1**Innovation by States for provision of health care services, 1995-2000**

Area of innovation	Broad direction of the innovation and initial innovators
Public-private partnerships	Handing over management of public facilities to NGOs (Gujarat, Karnataka); contracting private specialist services and outsourcing hospital ancillary services, IEC, etc. (most States)
Decentralization	Transfer of budgets to and involvement of local bodies (Kerala, Karnataka, HP, Orissa); Management Boards of Health Facilities (Rajasthan, MP, AP)
Human resources	Contracting professionals for service delivery-ANMs, doctors, surveillance, auditing, etc. (all States); multiskilling, pre-internship training, mandatory pre-postgraduate rural service (Orissa)
Financing	User fees and financial autonomy to hospitals (MP, Rajasthan, AP, Karnataka, Punjab, West Bengal, Maharashtra); health insurance (AP, Karnataka, West Bengal); direct transfer of funds from GOI to districts under NHPs; financial delegation of powers to PHCs, CHCs and district CMOs (Tamil Nadu, Gujarat)
Accountability	Delegation of powers to district-level officials (Gujarat, TN); rationalizing responsibilities for better accountability, performance-based monitoring (AP, Gujarat)
Community mobilization	Link couple schemes (Gujarat, Rajasthan); village planning and community health worker (MP, UP)
Regulation/standard setting	Quality control circles (Gujarat); blood transfusion standards (NACO); ISO certification (Karnataka, HP); ensuring essential drugs at health facilities under the Panch Byadhi chikitsa scheme (Orissa); Centralized drug procurement (TN, Orissa, AP, Rajasthan)
NGO: non-governmental organizations; IEC: information, education and communication; ANM: auxiliary nurse-midwife; NHP: National Health Programme; NACO: National AIDS Control Organization; ISO: International Standards Organization	
Source: Initiatives from nine states, GOI, 2004	

needs to travel over 2 km to reach the first health post for getting a tablet of paracetamol; over 6 km for a blood test and nearly 20 km for hospital care. It is estimated that 25% of people in MP and Orissa could not access medical care due to locational reasons, while it was 11% for UP. Further, even when accessed, there is no guarantee of sustained care. Several other deterrents such as bad roads, the unreliability of finding the health provider, costs for transport and wages foregone, etc. make it cheaper for a villager to get some treatment from the local quack.

What are the reasons that led to such failure? Essentially three broad factors – poor governance and the dysfunctional role of the state; unrealistic goal-setting and lack of a strategic vision; and weak management.

Institutional reasons for failure

Poor governance and dysfunctional role of the State

No system, however well-designed and well-intentioned, can function without a guiding and regulating force and a strong 'political will'-the combined force of the political and administrative system to effectively translate policy aspiration into action. Admittedly, governance in health is difficult. Unlike other sectors, it is intertwined with socioeconomic and cultural factors, because of which health personnel have little control over outcomes. This is made more complex with various ministries administering matters that directly affect population health with no coordinating mechanisms among them. For example, in the Central Government, the pharmaceutical industry is under the

Ministry of Chemicals, policies related to the import or export of drugs and technology are the responsibility of the Ministry of Commerce, drug regulation is under the Ministry of Health, nutrition is partly under the Department of Women and Child Welfare, Health Insurance under Ministry of Finance, etc. Similarly, there is a division of responsibilities between center and states within the health sector itself: while health is a state subject, the center has jurisdiction on infectious diseases, medical education and research, population control etc. The distribution of subjects between the center and states has no rational basis and has in no small measure affected accountability, necessitating a review. Such fragmentation of responsibility across departments and constitutional entities has resulted in confining health governance to implementing only public-funded activities and programmes, to the exclusion of wider health system issues, including the functioning of the private sector, which is seen as an independent, autonomous entity.

Another major impediment in the effective governance of health is the structural mismatch in the institutional arrangement of Central and State Ministries: into departments of Health, Family Welfare and Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH). Such fragmentation that took place in the 1990s had negative effects, making inter-programme integration problematic, diluting the technical capacity to think holistically and duplicating resource use. For example, the Reproductive and Child Health (RCH) Programme rarely addresses HIV/AIDS, Malaria or Tuberculosis (TB) programmes. Likewise, the Malaria Control Programme has no indicator focusing on pregnant women, or nutritional deficiencies in the child health programmes.

Restructuring of the administrative departments for better governance

Organizational structures reflect the objectives and aims of a policy. Departmental segmentation in an ad hoc manner without any functional linkages affect both programme management as well as service delivery. In states where the Health Department is divided into Health and FW, implementation of the FW programmes has been difficult due to the non-alignment between authority and responsibility. Likewise, programmatically, the lumping of RCH with Family Planning and population stabilization have resulted in making women's health concerns subservient to family planning and sterilization, since reproductive health (Child Survival and Safe Motherhood) is visualized as an instrument to achieve the small family norm. In the process, both goals have suffered. Thus, administrative restructuring on a functional basis all through the chain is essential for ensuring clarity of policy formulation and strategies to translate policies into programmatic interventions.

Views of expert committees on administrative restructuring

The Central Ministry recognizes that restructuring is needed to meet the emerging challenges. Three reports were commissioned by the Government: Administrative College of India (1986); the Bajaj Committee (1996) and the Centre for Policy Research (2000), whose broad recommendations were to delegate greater managerial and financial responsibilities to hospital managers; outsource and decentralize promotional and publicity functions; constitute advisory bodies; decentralize planning and programme formulation to States, confine the Centre to monitoring adherence to national policy goals and providing technical support; merge all the three departments; create an Indian Medical Service like the Indian Administrative Service (IAS); establish an institutional mechanism for inter-departmental coordination; and establish a manpower planning cell in the Ministry, etc. It was believed that implementation of these recommendations would 'free' the Ministry of Health at the Central and State levels to address the more important issues of governing the health system as a whole.

Goal-setting: Weak evidence base for a strategic vision

The absence of good-quality research for evidence-based policy formulation is one reason for poor goal-setting and programme designing. For example, a principal goal of the National Reproductive Health Programme is to reduce maternal mortality. Pregnancy related complications claim over 100,000 women every year that could have been averted by skilled attendance and in about 2-3% of the cases by surgical intervention. The international definitions of skilled attendants disqualify both the traditional birth attendants (TBAs) and the 18-month trained ANMs. Surgical interventions, on the other hand, require a minimum infrastructure such as access

to blood, an operation theatre, and access to personnel skilled in midwifery, surgery, administration of anaesthesia, etc. It follows then that public policy should have focused on making investments on infrastructure development and building up the required professional and skilled cadre of attendants to facilitate safe and institutional deliveries. The failure to link interventions with evidence has resulted in poor outcomes.

Countries such as Sri Lanka have succeeded because of clear and consistent strategies that brought down maternal mortality rate. Sri Lanka established a system of holding village-level clinics by professional health teams (consisting of a medical doctor, a trained nurse, laboratory assistant, etc.) for providing ante natal care (ANC) and other health care services. Alongside, there was sustained investment to establish a well-equipped health infrastructure that facilitated early transition to institutional delivery. A strong health management information system (HMIS) and monitoring system carried out regular medical audit of every maternal death for corrective action. Similarly, Malaysia too established a clear policy and a working framework that reduced the MMR.

Compared to this, for several years India promoted training of village-based TBAs, consistently lowered the quality of training and competencies of the ANMs, and neglected supervision and monitoring. Resorting to such low-cost solutions helped avoid committing resources required for the establishment of the requisite infrastructure and human resource development (Table 2.2 see also Box 2.2).

Performance-based monitoring

No method is currently available with the health system to measure or assess on a concurrent basis the efficacy or utility of an intervention or to identify critical problems and suggest corrective action. However, for every corrective system put in place, a more ingenious system of statistical manipulations pervaded. Performance-based monitoring is frequently manipulated and at every level (e.g. indicators such as the number of blood slides investigated, tubectomies performed, etc.). In a private management, such outcomes get translated into money earned by way of patient payments. In a government set-up, which has no possibilities for such quantification, it is difficult to link outcomes with the quality of work being done, enforce provider accountability and review the progress being achieved towards the goals set. Correcting this implies setting up a system of monitoring and review which are transparent and frequent such as, for example: (i) statistical sampling every quarter, and (ii) social audit.

Management failures

Poor management of resources and lack of decision-making, coupled with low budgets, irregular supplies and corruption have adversely impacted the public health system. (Lok Adyuktha of Karnataka estimates corruption to account for the leakage of almost 25% of public funds.) The dispersed and disaggregated nature of responsibilities, and conflicting job roles

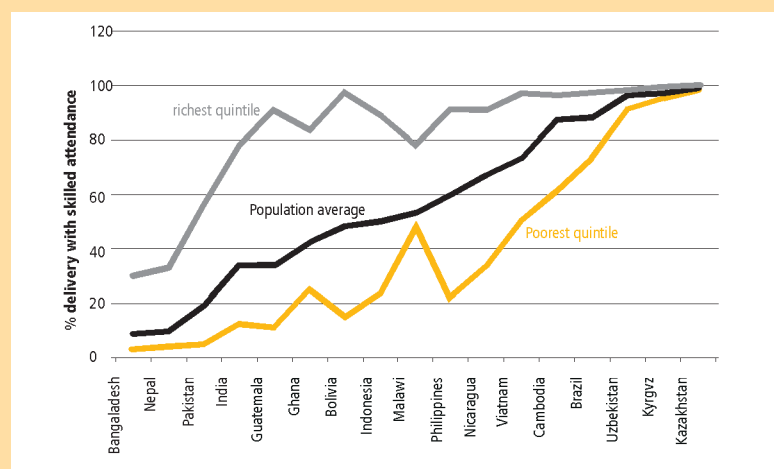
Table 2.2**Why were Malaysia and Sri Lanka successful in reducing maternal mortality? Year and Rate per 1000 live births**

Interventions	Malaysia	Sri Lanka	India
1950-1957	1950:534	1947: 1056	1947: 2000
● establishment of systems to train and supervise midwives, regulate midwifery practices ● introduce accountability for results, systems for monitoring births and deaths ● models for effective communication with women and communities ● better obstetric techniques for those who already had access ● introduction of modern medical advances into existing services- general health improvement, including malaria control, antibiotic introduction	1957:282	1950:486	1957 : 1321 Recognized the importance of maternal care; focused on socio-economic development and access to nutrition and antenatal care
1957-1970			
● Improved access for rural population- the critical elements of obstetric care were made available to the bulk of the rural population, through development of a widespread rural network of trained skilled midwives as its backbone, along with hands on support from supervisory staff competent in basic obstetrics and a system for prompt access to facilities that could treat obstetric complications.	1957:282 1970:148	1950:486 1963:245	1957: 1321 1970: 900 Created the ANM but merged MCH and Family Planning. Family Planning gained priority
1970 onwards	1976: 78	1973: 121	1970:900
● use of strategies to increase utilization of existing services through better management, a focus on quality and systemic responsiveness to public needs and expectations	1985: 37 1991: 18	1981: 58 1992: 27	1980:810 1990:519 1995:440 1998:540 (NFHS) 1983 NHP recognized high MMR and IMR but reiterated need to train TBAs as the main strategy; in 1985 Technology Mission for UIP launched. In 1990, policy shift to comprehensive Child Survival and Safe Motherhood with focus on providing EmOC in 1720 FRUs to be established at the rate for one for every 500,000 population, against which 600 set up but not even one had the full complement of inputs. Besides, focus on FRU was misplaced as evidence showed that 85% of maternal complications can be handled at CHC/PHC with intensive training focused on skill development in obstetrics and midwifery, rather than the 6 day class room training; improvement of facilities at the CHC and referral systems; In 1997, RCH-I designed with about 30 interventions, adding RTI treatment, RCH camps, contractual appointees, etc. without consolidating the initiatives of the earlier projects; In 2005, RCH II strategy is still being formulated alongside the launch of the National Rural Health Mission which once again seeks to focus on developing a cadre of community based workers.
ANM: auxiliary nurse-midwife; MCH: maternal and child health; NFHS: National Family Health Survey; MMR: maternal mortality ratio; IMR: infant mortality rate; UIP: Universal Immunization Programme; EmOC: emergency obstetric care; FRU: first referral unit; RTI: reproductive tract infection			
Source: Adopted from World Bank 2003			

Box 2.2

Evidence suggests developing and poor countries that have poor health systems account for 90 per cent of the 585,000 maternal deaths taking place annually. Women in sub-Saharan countries have 1 in 8 chance of dying from pregnancy related complications, compared to 1 in 4,800 in western countries. For each maternal death, another 30 to 50 women experience serious injury or infection⁴. In India, care seeking decisions are often not made by women themselves and are also often reluctant to report even minor problems. Birth attendants, even if they have some medical training, often wield little decision-making power, as a result of the low status they occupy in the social hierarchy, creating a 'culture of silence' as a result of the lack of women's autonomy and economic independence. While evidence suggests that maternal health care improves if poverty-constrained access to care is removed, however, improving economic status alone is inadequate in bringing down maternal mortality rates. Unless health systems are in place providing good quality facility-based delivery care as well as the availability of skilled outreach workers, this rate cannot decrease. Relatively low resource countries like Sri Lanka were successful as they combined community embedded maternal services with access to professional care. Percentage delivery attendance by wealth quintile in selected Asian and other developing countries

Source: Kunst and Houweling (2001), *Organisation and Policy*, 17, pp 297-316⁵.



⁴(WHO 2001, *Maternal Mortality in 1995*: Estimates developed by WHO, UNICEF and UNFPA, WHO Geneva).

⁵A global picture of poor-rich differences in the utilisation of delivery care, in (Van Lerberghe, W. and De Brouwere, V. eds) *Safe Motherhood Strategies: A Review of the Evidence, Studies in Health Services Organisation and Policy*, 17, pp 297-316.

make accountability problematic. While the Secretary of the Department has no control on when and how much money will be made available to implement programmes, the Medical Officer in the peripheral centre has no administrative powers over the front-line workers and other functionaries working under him. With most supplies such as vaccines and drugs being provided by the Centre for the National Health Programmes, the States have little control to ensure outcomes; procurement delays by the Centre can take as long as over one financial year, affecting the credibility of the system. All these factors have serious implications for the quality of management and efficiency of the system.

The reluctance of trained manpower, especially doctors, to serve in rural areas has become a major impediment in the

Government's ability to provide health services to the rural population. A study conducted by the World Bank showed absenteeism ranging from 40% to 45% among doctors working in primary health centres. Lack of professional growth, low pay and lack of appreciation also deter trained and skilled personnel to work for the government, and even when hired, there is high absenteeism.

Other reasons that illustrate poor management at various levels of service delivery are related to not ensuring a balanced mix of inputs; low quality of service provisioning in terms of inconvenient timing and poor sensitivity to patient needs; non-alignment among functions, capacity and resources; an abdication of responsibility to establish appropriate administrative systems regarding procedures and rules related to service matters of recruitment, placement, deployment, transfer, leave sanction, promotion; poor payment systems and inability to check the increasing trend to dual practice at the cost of patient care in government facilities; inconsistent procedure and rules, such as for example in the case of the MTP Act hindering compliance; and finally, poor facilities at the workplace, largely due to acute shortage of funds, resulting also in creating a demoralizing work environment. What emerges as the most important requirement is for States to have strong human resource development (HRD) policies clearly laying down the recruitment, promotion, transfer and training policies.

Absence of the capacity to plan and implement

There is an accumulated shortage of epidemiologists, biostatisticians and other personnel trained in public health. Specialists in certain disciplines often work as generalists in public health, which is an inefficient use of a scarce resource. Even generalist bureaucrats who serve as Project Officers for special programmes (such as HIV/AIDS control) often lack the technical capacity to provide the desired level of comprehension and quality of leadership, proving to be a serious handicap. Lack of relevant technical expertise and non-availability of even the critical minimum at the Central and State levels are reasons for public health programmes lacking in focused design, non-development of national treatment protocols and standards, non-integration with other related sectors/programmes such as TB with HIV, HIV with maternal health, maternal health with malaria, health with nutrition or water, etc. The inability to

provide required technical leadership to States and districts on the operationalization of interventions based on technical norms or the inability to assess and build the technical skills and human resources required by the programme is yet another reflection of the lack of technical leadership. More important is not utilising operational research for designing better targeted programmes in keeping with the wide social and geographical disparities that characterize this country has been a serious shortcoming. Instead, at the Central and State levels almost 40% of the time of these poorly equipped officers in charge of complex programmes is spent in attending to administrative duties. A survey of six States conducted to assess technical capacity in States for maternal health programmes (or for that matter, malaria), showed that barring one Deputy Director-level officer in Kerala, in none of the remaining 5 states of TN, Maharashtra, Rajasthan, Gujarat and Chattisgarh was there even one officer exclusively earmarked for monitoring the maternal health programme (Mavlankar, 1999). Bad staffing plans, poor vision to address local and grassroots-level health issues have led to cursory filling-up of posts. Even in the Central Ministry, there is a shortage of critical staff, even in the vital sector of drug regulation. Of the 12 Additional DCGI posts, only 4 are filled up, at a time when the country is rapidly moving towards a more liberal and open environment, necessitating a strong regulatory capacity. There is an urgent need to critically review not only the availability of the required staff but also a critical assessment of the quality of skills possessed by such persons to appropriately address the current-day challenges of policy and programme designing and implementation.

Lack of focus: Vertical versus horizontal programmes

The NHP, 1983 made a strong policy commitment to establish comprehensive primary health care, based on the active involvement of the community and intersectoral linkages to health determinants such as nutrition, water, sanitation, etc. Such an approach, if implemented, would have helped avert the premature death of an additional 1.5 million infants and 800,000 maternal deaths. The gains could have been impressive, but the policy was hardly implemented. Worse, strategies contrary to what was stated in the Alma Ata Declaration to which India was a signatory and was reaffirmed in the NHP 1983 were adopted, such as the selective primary health care approach.

Resource constraints forced the prioritization of interventions. These were selected on the basis of those that affected the poor disproportionately more, were technically feasible to implement and could be made available at comparatively low cost to be implemented vertically from the Centre. Evidence from community-based experiments and surveys, however, tell another story. They conclusively show that people have other health needs and expectations from their health system, which make integrated approaches more effective, efficient and, in the long run, more sustainable. The experiments also show that vertical programmes fail to integrate with the provisioning of general health services, weaken the health system as a whole and, over time, get disconnected from local health prob-

Box 2.3

Given the large number of domiciliary deliveries, health workers visited an average of 5.1% of mothers within one week of delivery and 16.5% of mothers within 2 months of delivery. In MP this figure was 1.8% and 10%, and in UP it was about 2% and 7.2%, respectively. This not only explains such high neonatal mortality but also the unattended morbidity which in these two States was reported to have affected nearly 17% women, while 10%-13% suffered heavy vaginal bleeding. Such postpartum morbidities go unmonitored as they are not part of the targets to be achieved.

Source: National Family Health Survey II, GOI, 2000

lems, priorities and the community itself.

These observations find resonance in the experience gained so far, which shows that a range of health needs such as treatment for debilitating fevers that result in loss of wages, treatment for epilepsy, uterine prolapse, infertility or menstrual problems affecting women's ability to work are concerns that are ignored, as the public health systems narrowly focus on achieving programme targets: such as for example, sterilization, immunization, collection of blood smears in fever cases, providing drugs to sputum-positive persons. In fact, even in a programme such as RCH, which is expected to be gender-sensitive, due to its vertical, target-oriented nature, women receiving postpartum care were very few (Box 2.3).

Yet another example of unintended distortions in programme delivery, is the Universal Immunization Programme (UIP) that aimed to ensure that all children are protected against vaccine-preventable diseases. Before the benefits of this initiative could be realized, the Polio Pulse Initiative (PPI) was launched in 1997. The immunization staff in Uttar Pradesh relate their failure to achieve any of their Programme goals under the RCH, TB, UIP or FP, to the overbearing emphasis given to polio, which not only commands better resources and visibility in the media but also consumes nearly one-third of the time, costs 30 times more than routine immunization and exhausts their staff. The Rapid Household Survey conducted in 2004 shows a grim picture of the severe setback that the UIP has received ever since the PPI was launched (Table 2.3).

Table 2.3

Comparison of performance under routine UIP in 220 districts between 1998 and 2003 (in %)

Item	Positive decline	Stagnant	Improved
BCG	13.2	72.3	14.5
DPT3	40.4	53.8	5.8
OPV3	54.1	43.6	2.3
Measles	30	57.7	12.3
Full immunization	48.2	43.2	8.6

BCG: Bacillus Calmette-Guerin; DPT: diphtheria, polio, tetanus; OPV: oral polio vaccine
Source: IIPS, GOI 2005

Box 2.4**Merits and Limitations of Vertical programs**

Horizontal	Vertical
Strong decentralized health systems	Weak or centralized systems
Endemic conditions	Epidemic or rare diseases
High administrative or management capacity nationally or provincially	Low management capacity at district or health facility levels
Emphasis on long term strengthening and sustainability	Emphasis on short term effects through high coverage levels
Less likely to obtain external funding	More popular with donors
Integrated programs covering various illnesses and interventions	Selective programs restricted to few key illnesses and interventions
Interventions often technically simple	Interventions are technologically complex
Use of health services high	Low uptake of health services
More responsive to community and local needs	Responsive to national or internationally defined priorities

Source : Victoria G Cesar et al, 2004

Such isolated programmatic approaches have made it impossible for the health system to develop. Therefore, even as India prepares to control or eradicate diseases such as polio, questions arise on the effectiveness of vertically driven strategies that are implemented in a campaign mode in a weak health system which is unable to synchronize its several responsibilities, resulting in the neglect of other important public health functions in favour of one. It is ironical that while in weak health systems, vertical programming seems to be the only way of achieving at least some outcomes, it is such concentration of energy to a few aspects that acts as the barrier for the health system to develop, with long term consequences as is being witnessed in Africa and Bihar in India where the delivery of even the vertical programs is becoming impossible due to the absence of the minimal threshold of physical infrastructure. The Box 2.4 provides the merits and demerits of the vertical and horizontal approaches.

The issue between vertical vs. comprehensive approaches is not merely a question of either / or but of being able to develop a balanced strategy that gradually strengthens the health system while at the same time is able to focus on certain principal interventions. This would mean having a system where the program policy and design issues along with broad budgeting are separated from the actual implementation in the field, as the two need different organizational and financial structures, flexibilities and strategic approaches. See also Box 2.5

Devolution of authority to local bodies

In the health sector in India, decentralization has to be viewed in the context of devolving authority and power to the States by the Centre, to the districts by the States and from the districts to the multilayered local bodies. Such devolution of

Box 2.5

Another example of a narrow, programmatic approach is TB. While the technical efficacy of DOTS for curing TB is in no doubt, there is a great deal of concern in all quarters of the techno managerial approach to a disease that is embedded in biosocial determinants of poverty, malnutrition, poor housing, illiteracy, financial problems and migration, and low resilience to the initial side-effects of the drugs, affecting ability to work. The DOTS programme is highly sophisticated and input-oriented. Very little effort or budgetary resources are available to tackle the root cause of the disease, for spreading awareness about the programme, for social mobilization to see that people in need get the treatment.

A study conducted by Tuberculosis Research Center (TRC), Chennai showed the strong presence of stigma due to poor awareness of the aetiology, symptoms and curability of TB, resulting in an estimated 6.7% of the patients giving wrong names and addresses. Further the study also showed initial reaction of diagnosis of TB resulted in 60% of the patients falling into depression and 9% considering suicide. 50% of the women indicated inability to attend to housework or absent themselves from work resulting in income loss and further worry. The study has persuasively argued for the need to invest in counselling services, developing support systems, IEC and

Source : TRC, Chennai 2000 and Nergis Mistry, 2005

active case finding through well structured outreach services.

Another equally legitimate concern expressed widely is the growing primary multidrug-resistant (MDR)-TB that is estimated to be 2.8% in North Arcot (TRC), a place close to Chennai. What, then, of the more remote places where assuring close supervision could be a logistical problem? Russia, which introduced DOTS in 1994, reported that during 1997-99, the incidence of MDR-TB rose from 6% to 13%, while among chronic cases it was over 60%. Drug resistance happens due to inadequate treatment, use of substandard drugs, inappropriate preparation and non-compliance by the patient due to various reasons. MDR-TB is not only far more expensive to treat but may also not be treatable. Yet, India barely has a surveillance network to closely monitor this particular aspect. This inadequacy assumes particular significance in the shopping that patients resort to on an average, about 6-9 providers before finally reaching the DOTS centre, which not only drains the financial base but, with the irrational prescriptions given, could well be contributing to drug resistance. The story of TB clearly reiterates the need for social/community control on the process and the need for adopting a public health approach to the disease.

authority has taken place only in Kerala, which invested time and resources in systematically building capacity for governance by local bodies. Leadership and governance means having the ability to plan, budget, implement, manage, monitor, review and accept responsibility for decisions taken.

Devolution of power in the health sector has, however, not been easy, even in Kerala. This is because of the lack of technical guidance at the Panchayat level, lack of standardization of facilities laying down clearly the functions, duties, responsibilities and outcomes of health personnel and facilities located at different levels, and an absence of priorities in the interventions that need to be focused upon. Lack of integration between different systems of medicine, problems of compatibility between the highly educated doctor, and functionaries of the local government, dual control, multiplicity of bodies handling health budgets are other reasons that have complicated matters. As these issues were not resolved, fiscal devolution did not really make the desired impact. Because of these factors, utilization of local bodies as agents of change or in social mobilization has been minimal and perfunctory.

While the 73rd and 74th Amendments do give us a great opportunity to foster a democratic system of governance in health, implementation has been tardy. In fact, besides functional delegation, fiscal devolution is more critical; it is more than the mere release of funds for carrying out public functions as an agent. It encompasses expenditure decision-making and responsibilities, as also revenue responsibilities and accountability to the community for service delivery.

Applying these principles will mean having a clear-cut delineation of duties and functions to be carried out by the local bodies at different levels vis-a-vis the Government departmental hierarchies; the financial implications of those functions and systems for utilization and reporting; and, finally, the kind of authority, powers, or control they have on the functionaries responsible for discharging those duties. Without such a systems approach merely 'orienting' locally elected representatives to be 'involved' in health activities will be of marginal value.

Box 2.6

International experience in fiscal decentralization has a few lessons based on certain principles:

Fiscal decentralization requires addressing

- expenditure responsibilities, discretionary powers, revenue raising powers, accountability of the functionaries to the local body, etc.;
- availability of a strong State ability to monitor and evaluate the intergovernmental fiscal system;
- devolution of powers and responsibilities in keeping with capabilities;
- linking of revenue raising and expenditure decisions;
- designing the intergovernmental system to match a set of clearly specified objectives, kept simple and flexible for accommodating changes, while at the same time subject to the discipline of budget constraints.

Source : Fiscal Decentralization to Rural Governments in India, World Bank, 2004

Given the vastness and diversity, India will find it difficult to reverse the rising trend of communicable diseases such as malaria, TB and HIV/AIDS without the active participation of communities. Village Health Committees working in coordination with the duly elected local bodies seem to be an effective option for making the health system more accountable to the people they are meant to serve. In other words, more inclusive approaches and greater democratization have the potential to enable early realization of health goals.

The role of the private sector in health care delivery

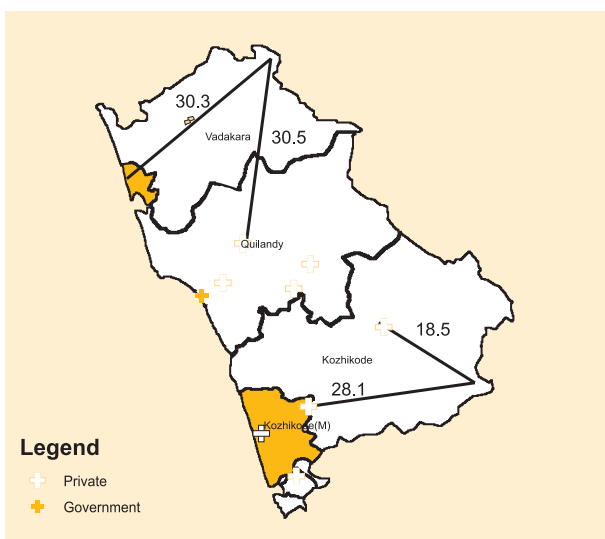
Private health markets are profoundly affected by several factors: nature of health financing and payment systems, type of technology, cost of initial education and training, public expectations and perceptions, regulatory frameworks, societal values, etc. International experience shows that the private sector tends to focus on profit maximization and is hardly concerned with public health goals, making state intervention essential.

Over the years, the private sector in India has gained a dominant presence in all the submarkets—medical education and training, medical technology and diagnostics, pharmaceutical manufacture and sale, hospital construction and ancillary services and, finally, the provisioning of medical care. Over 75% of the human resources and advanced medical technology, 68% of an estimated 15,097 hospitals and 37% of 623,819 total beds in the country are in the private sector. Data from the 57th Round of the National Sample Survey (NSS—Survey of Unorganised Services, 2001–02) estimates the existence of 13 lakh health enterprises employing 22 lakh people. Of these, 25% are AYUSH practitioners. Over one-third of these enterprises reportedly have no registration of any kind—possibly they constitute the large number of informal providers ranging from traditional healers, bonesetters to birth attendants.

Coinciding with falling public investment, the emergence of non-communicable diseases and an effective demand, the steady corporatization of medical care is a new development. In no small measure is this development also the result of the liberalization-privatization process that India has been witnessing since the early 1990s. Seeing the scope for profit, several non-resident Indians (NRIs) and industrial/pharma companies are also investing money in setting up superspecialty hospitals such as Medinova, CDR, Medcity, L.V. Prasad Eye Institute in Hyderabad, Hindujas and Wockhardt in Mumbai, Max, Escorts in Delhi, etc. With these institutions capable of providing world-class care at a fraction of the cost compared to the West, there is enormous potential for India to become a hub for medical tourism, not without entailing certain trade-offs in terms of welfare implications such as the raising of the overall cost of health care in the country and generating pressures for increased budgetary allocations for government hospitals to stay competitive.

Fig 2.1

Distance to Emergency Obstetric Care (EmOC) Facilities Kozhikode (in km)



Current status of the private sector in India

There is vast diversity in the composition of the private sector, consisting largely of sole practitioners or small nursing homes having 1–20 beds; serving the urban and semi-urban clientele and focused on curative care. In the absence of regulations governing location, standards, pricing, to name a few, private facilities run in marketplaces, residential colonies, pharmacy shops, with freedom to provide any kind of service, of whatever quality and at exorbitant cost, which varies from facility to facility. Studies on the private sector, though based on small localized samples, provide insights and evidence on the type and quality of services provided, human resources engaged, technology used, etc. Of concern is the documentation, though limited, on the abysmally poor quality of services being provided at the rural periphery by the large number of unqualified persons.

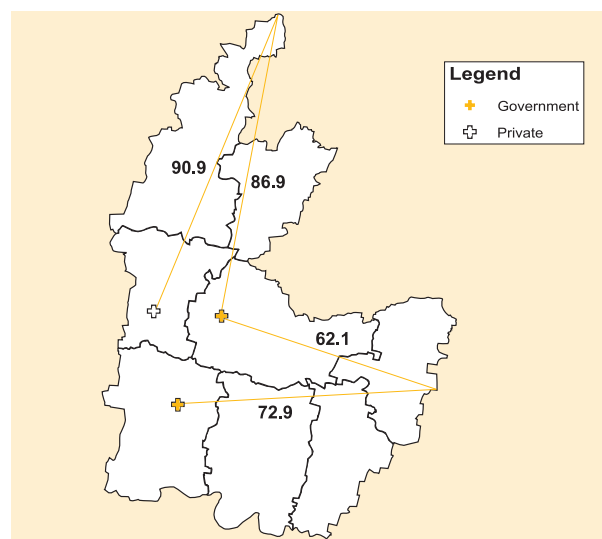
Qualified provider submarket: Findings of an eight-district survey

Current research on the private sector falls short of providing information on the financial and policy implications of engaging with the qualified providers working in the private sector. To get some evidence on these aspects, the Commission undertook a Facility Survey in eight middle-ranging districts: Khammam (AP), Nadia (WB), Jalna (MH), Kozhikode (Kerala), Ujjain (MP), Udaipur (RJ), Vaishali (BH) and Varanasi (UP). The survey brought out important aspects that a public policy will have to address while designing an appropriate strategy for engaging with the private sector:

- (i) A highly skewed distribution of resources—88% of towns have a facility compared to 24% in rural areas;

Fig 2.2

Distance to EmOC Facilities Jalna (in km)

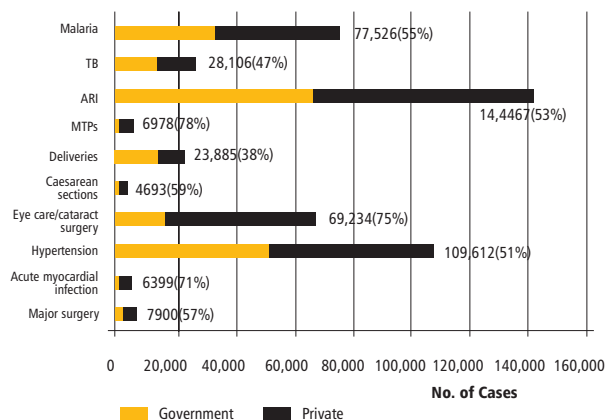


- (ii) 75% of specialists and 85% of technology are in the private sector;
- (iii) 49% of beds are in the private sector but bed occupancy is only 44 % against 62% in the public sector, which also showed a higher productivity per doctor;
- (iv) Acute shortage of human resources with an average for all districts of 0.4 doctors per 1000 and 0.32 nurses per 1000 population as against the national average of 0.59 for doctors and 0.79 for nurses per 1000 population and a global norm of 2.25 of human resources per 1000, made worse with nearly two-thirds concentrated in urban towns;
- (v) 35 out of the 80 blocks have a negligible to nil number of nurses or doctors either in the public or private sector;
- (vi) Only two centres have an emergency obstetric care (EmOC) facilities in a district, entailing long distances to be traveled making them virtually inaccessible (Figs 2.1 and 2.2);
- (vii) The number of cardiologists was negligible;
- (viii) 75% of service delivery for dental health, mental health, orthopaedics, vascular and cancer diseases and about 40% of communicable diseases and deliveries were being provided by the private sector (Fig. 2.3).

Lessons from the eight-district survey

1. Supply gaps and distributional inequities

No insurance policy, no matter how attractive, can have any value for the poor if the provider supplying the services is located at a distance that would entail huge indirect expenses in terms of loss of wages, transport costs, etc. The survey showed that in the poorest districts where the majority of the poor live, the distribution of facilities is highly skewed. In

Fig 2.3**Public-private share in national health programmes**

Note: Total number of cases and the figures in parentheses are % of the total for private sector

half the rural areas the only alternative is the ill-equipped and underfunded public sector, which in some states such as Bihar, exists 'mostly on paper'.

Such distributional inequity raises three issues that need to be addressed:

- duplication of public and private facilities with the private sector located where the public sector is already established. With an estimated 30% of the private sector consisting of government doctors, relocation of facilities could be initially problematic due to a conflict of interest. Moreover, choice in a small market space could affect viability, giving rise to undesirable practices to stay competitive. Besides, given the population size, there is not enough room for a full-fledged 30-bed CHC as well as a variety of private facilities to function. Policy choices in such a situation could range from reducing the standards of public hospitals to cater to half the patient load or motivate the private sector through a range of financial incentives to relocate in underserved areas;
- non-standardization of facility location in accordance with norms or need. Such non-standardization could create problems while considering other alternative payment systems such as capitation, considered to be a better system for containing cost than the existing fee-for-service. Capitation systems, as in the UK, function on the basis of an assured population base whose health needs are taken care of by the provider available within easy distance and accessible at all times. So, while on the aggregate there are an 'adequate' number of qualified providers available, they need to be deconcentrated to get a more equitable spread to enable 'attaching' populations to providers;
- lack of multiskilled provider networks necessary for collaboration on the basis of providing a basket of services rather than a single one-time activity like a delivery or a sterilization. At present, over 90% of the private sector in rural areas consists of sole practitioners who can at best provide some outpatient (OP) services and refer. Contracting this

provider for providing a basket of services to the community would require expansion of the facility in accordance with standards. Such expansion would require investment that a practitioner would be willing to make only if he is certain that he will get the contract for the period of time required to break even. In a competitive system where providers would perhaps be selected on the basis of open tenders, such assurances become problematic and require a new set of procedures and rules. At the same time, if competition is eliminated, then the provider can charge monopoly prices.

What emerges from the data is the need to undertake detailed microplanning of facilities and, based on regulations, financial incentives and a process of negotiation, undertake the task of relocating facilities as per need. Addressing this issue will therefore call for a policy package that will help stimulate such reorganization and restructuring of the public-private sectors so as to have an equitable spread of facilities in accordance with viability norms and functional needs. For any health insurance scheme to work, this will be the first requirement.

2. Options for expanding access to specialists and technology

One of the policy options to ensure timely access could be increasing public investment. In China, county hospitals (equivalent to our sub-district hospitals) have CT scans. Such strengthening of public facilities will help create a more competitive environment and force down the prices in the private sector to reasonable levels. Second, public-private partnerships on a joint venture basis for offering high-end care and assuring their adherence to public health goals by having public representatives on the board of such ventures, can widen access. However, any such collaboration would require to be based on unit cost estimations to avoid arbitrary pricing. With treatment costs reportedly increasing at the rate of about 22% every year, cost control is critical to ensure sustainability.

3. Need for standards and treatment protocols

Engaging the private sector and regulating health markets will need to have a framework of rules. Standards-based payment systems help enforce provider accountability, check unethical practices and issues of conflict of interest. These are critical concerns as, for example, the survey found that in several places there was a clear nexus between private medical practitioners and pharmacy shops—in one district it was learnt that most pharmacy shops were 'owned' by the doctors; most private doctors depended on referrals from quacks who acted as 'procuring' agents for getting patients to their facilities in lieu of handsome commissions; fee-splitting between diagnostic centres and referring doctors, AYUSH practitioners practising allopathy, etc. Such practices contribute to increasing costs on account of over prescription of drugs, subjecting the patient to unnecessary tests and procedures, and over treatment. The indiscriminate proliferation of technology is a clear pointer to such tendencies.

Issues for policy

Equity: Cost of care

Pricing of services in the private sector is influenced by the source of capital and interest rates and prices of other inputs such as labour, rentals, technology, etc. while the competitive edge is determined by three factors—the experience of the treating physician, technology and location, which also act as barriers to entry. However, it is also observed that due to the generally low occupancy of beds, the private sector does attempt to stay competitive by appointing unqualified nurses and AYUSH doctors at far lower wages, combining practice with the sale of drugs and practices such as earning commissions from diagnostic laboratories for every referral.

Public policies in fixing rates do not take these factors into account. For example, under the Central Government Health Scheme (CGHS) for government employees, rates for reimbursement for services in private hospitals are based on an average of the rates quoted by all the tendering hospitals. In such a system, higher-than-market rates are paid to facilities located in smaller towns where input prices are lower and lower rates paid for city hospitals where input prices are higher. If the CGHS is an important source of revenue for the town hospital, then it generates an overall increase in the price structure in those areas, while in the city hospitals patients are forced to pay the differential amounts out of pocket. Similarly, in public hospitals, prices of diagnostic tests are lower than variable costs. While the intention of this policy is to make them accessible to the poor, in reality it is the richer sections who consume these services three times more than the poor, giving rise to issues related to resource efficiency and equity.

In the light of the above, it is necessary to initiate exercises to estimate unit costs of services and also bring in regulations to fix price ranges within which the public and private sector can be permitted to operate. In other words, such unit cost estimations provide a benchmark with which to compare the extent to which the private pricing is unreasonable or exploitative. Such an exercise would also help spread awareness of how 'free' is 'free health care' and make choices in favour of those investments that benefit the poor.

Pricing in the not-for-profit sector: Is the third sector an option?

Though scattered, isolated and small in scale, some NGOs have conclusively demonstrated that they have the capability of providing reasonably good-quality care at affordable rates to the poor. Besides, contrary to our experience with the for-profit private sector, public subsidies extended to NGOs have shown substantial social gains as experienced under the National Blindness Control Programme, under which almost 30 organizations located in underserved areas were provided a non-recurring grant of Rs 18 lakh for construction of an operation theatre or a ward, purchase of a microscope or vehicle, etc. in return for doing a certain number of intraocular lens (IOL)

surgeries free of cost and later at low rates against a subsidy of Rs 600 from the Government. These NGOs, along with other not-for-profit bodies, perform almost 30% of the total 4 million cataract surgeries carried out in a year. The experience under the National Leprosy Programme is similar.

Due to the rising cost of inputs and volatility of grants, foreign and domestic, the proportion of free care has reduced from 19% to 10% during the decade 1986–96. However, to ensure that the poor are not denied care for want of ability to pay, the not-for-profit institutions (NPIs) follow the system of differential pricing—higher amounts for patients who are well off and free or subsidized rates for the poor. Moreover, not-for-profit hospitals are able to achieve cost-efficiencies due to the following factors:

- Low wages of employees, employing contract workers and fixing the wage bill not to exceed 30% of the total;
- Utilization of specialist services on an honorary basis;
- Use of generic and essential drugs manufactured by not-for-profit organizations such as LOCOST;
- Emphasizing referrals and limiting the use of expensive technology.

Analysis suggests that the not-for-profit sector, particularly community-based organizations, seem to have had a beneficial impact on access, equity and quality of services in rural and backward areas. This sector, as opposed to the commercially oriented private for-profit segments, has therefore the potential to serve the poor in underserved areas if appropriately strengthened and given incentives by public policy.

Quality of care

Whether people are getting value for their money is difficult to evaluate in the absence of norms or yardsticks with which to measure good quality against bad. While the private sector has expanded access and been responsive to patient needs, competitive pressures have set off a 'technology race', making quality and cost a concern. In such a setting, despite having a poor knowledge base and following irrational, ineffective and sometimes harmful practices even for minor ailments, substandard facilities at the lower end of the spectrum continue to rapidly mushroom. A study in 1999 of 49 unqualified private medical practitioners in 4 blocks spread over 3 districts in West Bengal, observed that their poor knowledge and lack of training resulted in substantial morbidity, as many would go 'beyond their level of expertise in providing inappropriate treatment to retain patients'. (Bhat, 1999) Yet such practitioners enjoy social consent, and rational arguments of quality or harmful practices, lack of qualifications, etc. do not matter as, for the people, this quack is able to provide instant relief at an affordable cost. Therefore, in the absence of a nationally accepted set of standards and quality assurance mechanisms, there is a disturbing trend of perceiving the use of sophisticated technology (ranging from an MRI scan to an injection) as 'good' quality services and good value for money. In the health sector, patient perceptions determine health-seeking behaviour.

Quality is expensive in the short run, as it requires invest-

ment to attain minimum standards. Therefore, with public facilities chronically underfunded and private providers seeking to save on costs to maximize profits, low quality is an issue for both.

While in the long run, good quality can reduce morbidity and also be more cost-effective in treating complications arising out of the initial low quality and 'low cost' treatment, the motivation to institute quality assurance systems for enhancing patient safety will continue to be a low priority as long as payments are based on fee-for-service, since in such a system, every visit and every additional investigation brings revenue to the provider. Therefore, the non-development of standards and non-establishment of quality assurance systems either by law or professional bodies will be a barrier to the expansion of social insurance and financial risk protection, so vital for the poor.

Improving efficiencies: Is market segmentation practical?

In Canada, the private sector can only provide those services that the country's social health insurance policy does not cover i.e. domiciliary care, unless authorized by the Government and prescription drugs, but covers physician fees, certain tests like blood tests, ECG and others as ordered by the physician in out patient care and all expenses while in hospital. But then all payments to physicians and hospitals are reimbursed/charged in accordance with a schedule of benefits which provide the negotiated rates for every procedure/treatment. For de-listed services such as domiciliary care or eye examination, private physicians have freedom to charge. This avoids duplication of resources, unhealthy competition and greater efficiency of resource use. India should explore the feasibility of such segmentation so that the two sectors can complement and supplement each other, rather than substitute and duplicate. Such segmentation in the

Indian scenario could, for example, imply that treatment for diseases covered under the National Health Programmes be in the public domain, with the Government paying for the services provided, be it the public or private sector. An advantage of such a system could be standardized treatment and reduced probability of drug resistance, currently induced by the prescription of irrational regimen of drugs and medicines, largely in the private sector.

Public policy response: Public-private partnership

Having realized the dominant position of the private sector, the Government has, of late, attempted to engage the private sector in providing services under the National Health Programmes with the primary objective of expanding access. As can be seen from Table 2.4, the experience has been far from satisfactory and the little success achieved is more on account of the partnership with the not-for-profit and NGO sectors. The huge for-profit sector continues to be a parallel development that public policy has yet to take cognizance of.

Apart from the limited engagement of the Government with the private sector for achieving public health goals, three other forms of public-private partnerships are emerging:

- (1) Handing over of public facilities to the private sector for management in the nature of a joint partnership-examples of such an initiative range from PHCs handed over to NGOs to superspecialty hospitals in Belgaum to Apollo and financing the establishment of a superspecialty cardiac center on a turn key basis to Escorts in Chhattisgarh.
- (2) Contracting the for-profit sector for medical treatment. The largest example is the CGHS that has a contract with over 200 private providers for the medical treatment of its members at prefixed rates. Other PSUs have private doctor/hospital panels for their employees for outpatient and inpatient care.

Table 2.4

Public-private partnerships in the implementation of National Health Programmes

Name of the programme	Nature of collaboration	Outcome
Malaria	NA	NA
Tuberculosis (TB)	IEC materials, diagnostic and laboratory support	Negligible-problem of conflict of interest
Cataract blindness	IEC materials and cataract surgeries	Positive-30% of cataract surgeries carried out by private sector
Leprosy	IEC materials	Mainly NGOs.
Reproductive and Child Health (RCH)	Contracting specialists, conducting RCH camps, preparing IEC materials	Poor-huge amounts under contracting of specialists left unutilized due to non-availability of specialists where needed and amount of money offered not found remunerative enough by private practitioners
Human immunodeficiency virus (HIV)	IEC materials, care and support	Positive-mainly NGOs

IEC: information, education and communication

- (3) Contracting support/ancillary services such as diagnostic services for high-end equipment in West Bengal, to drugstores management in Rajasthan. Other forms of contracting are for specific ancillary services such as security, canteens, sanitary services, landscaping, etc.

Government efforts to collaborate with the private sector have been programmatic, sporadic, disjointed and tentative, and not the result of a well-thought out strategy aimed at achieving national health goals. In the absence of any evaluation of these arrangements, it is difficult to assess their utility or impact on Government budgets. It is, however, clear that such collaboration has enabled greater access, say to CGHS beneficiaries, or helped regular availability of drugs as in Rajasthan. However, the upscaling of these initiatives will continue to be stymied on account of the lack of clarity as to what financial and legal capacity and institutional arrangements governments need to possess to ensure that such partnerships result in social gain. This is important in the light of the negative experience of incentives given to private hospitals, such as excise duty exemptions, free land, etc. in lieu of treating 10% of inpatients and 40% of outpatients free. (Adverse comments of non-compliance to the conditions imposed were observed by the Legislature Committee of Andhra Pradesh as well as the Delhi High Court.) The conditions laid down by the Government were not adhered to by any of the recipients of such government subsidies.

Such public-private collaboration will continue to engage policy attention and is justified on the basis of resource limitations for expansion to meet the growing demand. There is, however, also a need to undertake operational research and analysis of the cost-effectiveness of contracting the private sector, given the fiscal position, for example, the implications to government finances and the potential for litigation due to any contingency where government is unable to pay its dues as per contract on account of an adverse financial situation. In such a situation resources may have to be diverted from public facilities to fulfill contractual obligations. However, such policies will have to be within the context of a regulatory framework and provisioning of financial risk protection.

Regulatory framework

The primary role of a government should be to protect patients' welfare by instituting regulations and rigorously monitoring their enforcement. However, drawing up laws in a sector like health can be complex. For example, inflexible legal provisions placing all risks on the provider may result in mindless litigation, increase defensive medicine and higher costs for the patient, endanger the patient-doctor relationship based on trust, and entail harassment and outright corruption at the hands of the bureaucracy. On the other hand, if the provisions are too lax, patients may end up getting short-changed. The objective of regulations must therefore be to increase awareness and create a sense of accountability among providers regarding the quality of patient care, and not a routine application of a standard or a rule. Thus, supervision needs to be supportive, and not prescriptive or fault-finding, as the objec-

tive must not be to drive away the providers but to persuade them, through the judicious use of carrots and sticks, of the need to adhere to quality and patient safety.

Since health is a State subject with the Centre having concurrent jurisdiction on only a few areas, they have the liberty to legislate their own laws. Given the wide variations across states it is necessary to undertake a comprehensive assessment of the adequacy or otherwise of the existing laws, identify the gaps and come up with a package of Public Health Laws. Areas that need immediate attention are the medical profession; siting of health facilities and quality of service provisioning; consumer/patient rights and ethical standards; disease control, drugs, pharmaceuticals and technology; social security and health insurance; occupational health and accident prevention; environment and environmental protection; food safety, maintenance of records and provision of basic health information to the authorities by private providers, etc. Regulations will need to effectively address market failures that give rise to malpractices such as fee-splitting, overmedication and poor adherence to quality standards. They also need to ensure ethical practices, transparency and dissemination of information on prices and quality to consumers, impose requirements for licensing and accreditation of hospitals, protocols and prices.

Regulation is limited in what it can accomplish and not a solution to the various problems. And when regulations remain unenforced then they count for little. It is therefore equally important to develop the capacity and a social consent to enforce them. Enforcement is expensive, requiring extensive data collection, collation, analytical research and computerization, and trained persons to inspect, verify, correct and monitor implementation of the contractual obligations. Likewise, microplanning, restructuring of the health provider markets, price-setting, etc. require patience, negotiating skills and dialogue with various provider associations. Thus, financial resources and making laws is only one part of the solution; having the required human skills and technical capacity to enforce them is another issue altogether that needs to be built up immediately. Without this capacity, institutionalizing public-private participation is difficult to sustain.

The three drivers of cost escalation in the health care system

Health care delivery requires a health system that stands on the three pillars of a professional human infrastructure, a rational, efficacious and affordable drug regime and easy access and availability to appropriate technology. It is these three inputs that drive up costs and need regulation and control.

Human resources for health

The shifts in disease burden and consumer expectations make the availability of new competencies and skills among the health personnel an immediate priority, as development of the required level and number of human resources take 7-10 years on an average.

Community base for health

Individuals and communities play an important role in their own health. Experience and knowledge of their environment, and traditional practices provide a strong basis for effectively addressing most cases of minor ailments and short episodes of sickness. Besides, the low cost of medication for such ailments makes travelling long distances unaffordable and expensive. To provide such care at the village level, several interventions have been made for having a trained health worker located within the community: the Village Health Guide (VHG, 1977); the Mahila Swasthya Sangh of the Department of Family Welfare; Jan Swasthya Rakshaks in Madhya Pradesh, Mitanins in Chhatisgarh; Jan Mangal Couples in Rajasthan; community-based workers under SIFPSA in Uttar Pradesh, etc. Under the National Rural Health Mission, there is now a renewed commitment to provide in every village / habitation a trained health worker in the low performing states, to start with.

Lessons from these experiments suggest that community-based health workers/volunteers require periodical training, close supervision and an integral linkage with the organized health system. Absence of such a nurturing framework can result in the worker being reduced to another quack providing some curative care to make money. Therefore, the success of such interventions will depend upon the support and sustenance received from the public health system.

To what extent are rural communities and the poor populations connected with this system established to serve them? As discussed below, the link is fragile. The functionaries in the formal system are not adequately trained on issues that matter to rural communities. The system is also not incentivized to treat the community as active participants to achieve a common aspiration.

The first contact for care in the organized health system: The multi-purpose health workers

The first rung of the professional cadre of health services are the 2 multipurpose workers (MPWs) manning a subcentre. The male worker is given 6 months' training in public health. With virtually no scope for in-service training, low motivation, high absenteeism and over 60% of the posts lying vacant, this cadre is the most neglected.

Of equal importance is the female MPW known as the auxiliary nurse-midwife (ANM). Originally conceived to address maternal and child health care in the community, there has since been a systematic dilution of skills, functions and credibility—reducing the educational qualifications, duration and content of training, poor quality of training and ill-equipped faculty, and no incentives by way of providing career progression etc. A survey undertaken in Andhra Pradesh and Rajasthan, to assess the knowledge and skill gaps of ANMs and other critical functionaries, on important programmes, showed ANMs' to possess poor knowledge of most critical indicators. (Table 2.5).

Table 2.5

Perceived knowledge about skill and actual gap

Area	Staff interviewed	Perceived awareness (%)	
		Andhra Pradesh	Rajasthan
National Programme on Women and Child "Malaria, TB, AIDS, leprosy, etc."	Doctors	50	47
	ANM	5	10
	MPHW/LHV (M & F)	16	25
	Staff Nurse	37	13
	LT/Pharmacist	10	8
Maternal health Enumerate the correct process for providing antenatal care (ANC)	Doctors	93	94
	ANM	94	90
	MPHW/LHV (M & F)	72	62
	Staff Nurse	100	87
What do you do in ANC? Screen for risk factors and medical conditions	LT/Pharmacist	25	—
	Doctors	100	100
	ANM	55	60
	MPHW/LHV (M & F)	72	62
Record BP	Staff Nurse	100	100
	Doctors	86	88
	ANM	55	0
	MPHW/LHV (M & F)	0	0
*Weight and height	Staff Nurse	100	100
	Doctors	64	80
	ANM	67	0
	MPHW/LHV (M & F)	32	0
Screen for anaemia	Staff Nurse	100	100
	Doctors	71	88
	ANM	55	70
	MPHW/LHV (M & F)	0	75
Give Tetanus Toxoid	Staff Nurse	100	87
	Doctors	100	100
	ANM	100	100
	MPHW/LHV (M & F)	0	0
Provide education on nutrition	Staff Nurse	100	100
	Doctors	43	70
	ANM	67	90
	MPHW/LHV (M & F)	68	87
	Staff Nurse	62	87

*Only weight taken Source: IIHMR, 2005

TB: tuberculosis; ANM: auxiliary nurse-midwife; MPHW: multipurpose health worker; LHV: lady health visitor; LT: laboratory technician; ANC: antenatal care; BP: blood pressure

Clearly, a serious omission in all these years has been the failure to establish a well-structured and skilled training and manpower planning division in State Directorates of Medical and Health Services. Though, many states have an elaborate training infrastructure—State Institutes of Health and Family Welfare (SIHFW), Health and Family Welfare Training Centres (HFWTC), District Training Centres (DTCs) and ANM Training Centres (ANMTC), etc. most suffer for want of good faculty or adequate budgets for any meaningful training. See Box 2.7

Training carried out so far functions on the implicit assumption that generating knowledge, rather than building competencies for action, would empower the health care provider to deliver effective and high-quality services. However, there is no behaviour change. There is no monitoring and follow-up to assess changes in performance and effectiveness of programmes. The training programmes are overwhelmed with the assumption that participants' acquisition of knowledge implies greater competence; learning is a simple function of the capacity of participants to understand and the ability of trainers to teach; and improvement of the individual leads to improvement in the organization.

Box 2.7

- The Rajasthan SIHFW, created under IPP-IX as a Society to ensure autonomy and flexibility for planning, designing and coordinating training in the state, has had no regular director for about four years. There is no regular faculty and most positions are vacant. The physical infrastructure has been created but yet to be developed to the desired level. There is no training budget in the state and for the Institute. Funding from the World Bank has come to an end thus bringing uncertainty in staff salary and continuation of training programmes.
- Most SIHFWs are in a similar position, struggling for funds; irregular leadership; unavailability of qualified and experienced faculty; limited training, etc. Similar is the situation with the 47 Health and Family Welfare training centres established for which the Government releases over 16 crore every year.

Source : IIHMR, 2005

Paramedical personnel

In the absence of a separate council, the training of most categories of paramedical personnel is unregulated, except for pharmacists, whose functioning is governed by the Pharmacy Council of India. Of the range of paramedicals required in the health system, the two key personnel are laboratory technicians and pharmacists. Even in these two cases, there is a dilution of standards. Most institutions impart a nine-month diploma course in laboratory technology for which a XIIth standard pass is considered eligible, even the one with an Arts/Humanities background. Therefore, there is an urgent need to upgrade the training courses for Laboratory Technicians to graduate level, i.e. BSc. (Laboratory Technology) and also fill up the 49% vacancies in primary health centres (PHCs) and community health centres (CHCs).

Similarly, training of most of the categories of pharmacy personnel is also unregulated and many unauthorized centres have opened-up all over India. In the absence of standards, most of the diploma-trained pharmacists, who are at best equivalent to pharmacy assistants or technicians in developed and many developing countries (such as Ghana, Fiji, Nigeria, etc.), perform tasks normally reserved for registered pharmacists. The knowledge and expertise of most diploma holders are inadequate for community practice.

Nursing services: Shortage of nurses

Nurses and midwives are important health care providers. In 2004, the nurse to population ratio in India was 1:1264 while in Europe it is 1:100–200 the nurse to doctor ratio was about 1.3:1 compared to a ratio of 3:1 in most developed countries. In India, there is no system of re-registration of nurses in most states. As of March 2003, there were 839,862 nurses registered with State Nursing Councils. Of these, an estimated 40% of registered nurses are active because of low recruitment, migration, attrition and drop-outs due to poor working conditions.

Roles and responsibilities: International experience

Most nurses in service are diploma holders and some are graduates. There are no specialist nurses in clinical areas such as Clinical Nurse Specialist (CNS), Nurse Practitioner (NP), Nurse Anaesthetist or Midwife in India. In the United States, the presence of Advanced Practitioner Nurses has helped in timely treatment due to early diagnosis, shortening the length of hospital stay, reducing complications, and increasing patient satisfaction. In Australia, Nurse Practitioners work at the community level as case managers as well as independent practitioners. In Australia and New Zealand, there are midwives whose have been trained at the postgraduate level.

Poor quality of nursing and midwifery education

India has 635 nursing schools and 165 nursing colleges. The quality of nurse training is affected when faculty is inadequate and teachers with a Masters or a Doctorate degree are few and for a combination of factors that could range from the non-adherence of the Indian Nursing Council (INC) teacher: student norms to inadequate infrastructure, insufficient budget, lack of commitment and accountability among educators for clinical supervision and guidance for students, inadequate and improper clinical facilities and insufficient hands-on training for students etc. In several places nursing schools function more as appendages of the district hospitals to which they are attached to and thus miss out on content related to preventive and promotive health. In 2004, 61.2% of nursing schools/colleges were found unsuitable for teaching. De-recognition by the INC has no impact as they continue to function with the permission of the State Nursing Council. This situation then calls for an immediate correction.

Need for inclusion of nurse component in accreditation

Due to the absence of an accreditation system for hospitals, there is a great variation in the quality of nursing. In Thailand, accreditation includes assessment of the nursing activity, nurses' notes, participation of nurses in patient care teams, role of nurses in infection control, etc. Such accreditation activity stimulates nurses for quality improvement. Quality assurance means having a code of ethics and professional conduct for nurses, standards, process and care plan, patient teaching, management techniques, continuing education, research and the nurse's role during disasters, etc. Further, nurses are members of such quality assurance surveyor teams.

Delegation of authority: An urgent need for upgradation of nursing skills and knowledge

No formal continuing education system exists in India for the training of nurses and midwives to keep them abreast with the latest developments in the field of nursing and public health. Unlike developed countries, India has no system through which clinical nurse specialists such as Nurse Anaesthetists can be produced. Similarly, Indian midwives working in the community setting are not allowed to administer injectable drugs even in an emergency, although they are allowed to inject vaccines to children. In developed countries, Nurse Practitioners provide services related to health promotion, therapeutic intervention and rehabilitation, and are allowed to independently provide

pain relief without medication, suction, education, counselling, primary medical care, midwifery and measurement of vital signs and under supervision, medication, injection, immunization, blood withdrawal, etc. Such delegation of functions after due training is required in India as well to widen access to care.

Doctors: Availability of doctors

Till September 2004, 633,108 doctors were registered with different State Medical Councils in India. This gives a doctor to population ratio of 1 for 1676 persons in India (or 59.7 physicians for 100,000 population). In comparison, physicians per 100,000 population in Australia, Canada, the United Kingdom and the United States were 249.1, 209.5, 166.5 and 548.9 respectively. Further, the doctor to population ratio in India is skewed-rural, tribal and hilly areas are underserved as compared to urban areas; and better performing states have thrice the number of doctors compared to poorly performing ones. As such, India faces a serious shortfall in the number of human resources required for health as compared to global norms in the states where they are most needed — Orissa being an outlier. (Table 2.6).

Specialist services for achieving MDG: Inadequate and non-available

As per norms, CHCs must have four specialists—a general physician, a general surgeon, a paediatrician and an obstetrician-gynaecologist. There is a shortfall of 62% in the number of

Table 2.6

Human resources for health (Allopathy) (selected states)

State	Population	No. of registered doctors	No. of Nurses	Number of ANMs	Total Human Resources	Human Resources per 1000 population – Norm 2.25/1000
States Above Norm of 2.25 /1000 population						
Andhra Pradesh	78,892,000	48402	84,306	94395	227103	2.88
Delhi & Punjab	40,583,000	62107	40568	16281	118956	2.93
Gujarat	51,057,000	36521	85406	35780	157707	3.09
Karnataka	54,692,000	65789	48,458	46817	161064	2.94
Kerala	33,365,000	32412	71,589	27612	131613	3.94
Orissa	37,091,000	14712	45,830	30077	90619	2.44
Tamil Nadu	63,755,000	71157	155,647	52341	279145	4.38
States Below Norm of 2.25 /1000 population						
Assam	27,520,000	15723	9,659	12187	37569	1.37
Bihar & Jharkhand	107,362,000	35110	8883	7501	51494	0.48
Madhya Pradesh & Chhattisgarh	86,681,000	29003	92158	25344	146505	1.69
Haryana	21000000	1285	15,821	13112	30218	1.44
Maharashtra	94,839,000	90855	79,004	24910	194769	2.05
Rajasthan	57,463,000	22506	31,063	21932	75501	1.31
West Bengal	83,079,000	52274	44,035	55855	152164	1.83
TOTAL	837,379,000	577856	504,628	464144	1854427	2.21
Sources: Medical Council of India, 2004; Indian Nursing Council, 1998, 2001, 2002						

sanctioned posts of these specialists in CHCs. Even out of the sanctioned posts, 38% are lying vacant. There are a negligible number of CHCs with sanctioned posts for anaesthetists. Table 2.7 and Table 2.8 shows the current rate of production, and the severe shortfall in the production of specialists, critical for achieving the national health goals.

There is an urgent need to create the required number of posts at all levels of care, fill up the vacancies by rationalizing and simplifying the recruitment procedures and develop incentive packages to retain them. Such efforts to keep the specialist workforce motivated are essential in the face of estimates which show that 30% of the annual output in 1986-87 (IAAME 1992) and 50% of students from AIIMS have migrated—both external (from India to other countries) and internal (from the public sector to the profit-oriented private sector).

Production of doctors: Distributional Inequities in opportunity and commercialization of medical education

The Mudaliar Committee of 1961 recommended the establishment of one medical college for a population of 50 lakh. As of July 2004, there are 229 medical colleges in India, of which 125 are in the public sector. However, these are not evenly distributed, with the poorest states having a lesser number of them (Table 2.9). The admission capacity in these colleges is 25,500 students per year with 55% in the public sector, a fall from 99% in 1950. There are 7700 undergraduate seats in north India compared to 18,000 in the south.

As can be seen in Table 2.9, in Category III and IV states, there has been an equal increase in the number of Indian Systems of Medicine (ISM) colleges during the period 1983

to 2002 : from 46 to 121 and from 75 to 162, respectively. A similar 30:70 ratio exists in PG seats also. Viewed from the norm of one medical college for 50 lakh population, states such as Uttar Pradesh, West Bengal, Chhattisgarh, Madhya Pradesh, Orissa, Assam and Rajasthan have a shortfall. These are also the states where the health indicators are acutely adverse.

The public-private distribution of MBBS seats among the different category of states indicates a more rapid increase in the southern and richer states. More importantly, the process of privatization of medical education also saw a phenomenal increase in the category III and IV states—from about 60 seats in 1950 to over 9500 in 2004 whereas in the category I and II states, the seats went up from zero in 1950 to less than 1000 in 2004. Despite the fact that all states equally faced the problems of restricted budgets, a growing demand for specialist services, and a more liberalized economy in India after 1990, only the better regions witnessed the growth of the private sector for a combination of factors: entry of educational entrepreneurs and influential persons wanting to 'invest' in medical education in response to favourable market conditions; the willingness to pay for such high-cost education and consequently, high-cost services. The implication of this development needs to be examined in the light of two concerns:

- (i) the potential to further widen the regional disparities, and the consequent incapacity to cope with the disease burden in view of international evidence suggesting that doctors prefer to practise where they live;
- (ii) the increasing compulsions to adopt protectionist policies to earmark seats on the basis of residence, social and religious affiliations, or on monetary grounds, overall acting as barriers to the entry for persons from the deficit states. (Mahal, 2004)

Table 2.7

Requirement versus availability of specialists of selected specialties for the delivery of health services in the public sector in India

Subject	PGs available for health delivery system annually (1)	Avg. No. of Diplomas awarded during 1999-2000 & 2000-01 (2)	No. of new specialists for Health Care Delivery System				
			Available annually (3) = (1)+(2)	Net available annually after migration* (4)=(3) x 0.6	Total required (5)	Required annually@ (due to attrition) (6)=(5)/30	Shortfall (7) = (6)-(4)
Community Medicine	0	11	11	7	3750	125	118
Pediatrics	111	153	264	158	7952	265	107
Skin and VD	30	29	59	35	1200	40	5
Psychiatry	5	21	26	15	1200	40	25
Ophthalmology	103	71	174	104	4296	143	39
Gynaecology/Obstetrics	219	198	417	250	7952	265	15
Anesthesia	100	171	271	162	7952	265	103

* Considering migration of 10% of specialists to other countries and 30% of specialists to the private sector in the country, thereby implying availability of 60% manpower for providing service in the public sector"

@ Considering average length of service to be 30 years

The number of specialists required has been based on the following assumptions:

"Community Medicine: One CMO at each district headquarters assisted by four other public health specialists (5 per district x 600 districts = 3000; 35 States/UTs- 20 per State/UT headquarters = 700; 50 for National level; Paediatrics, Obstetrics/Gynaecology, Anaesthesia: 3 at district headquarters and 2 at CHCs = 3 x 600 + 2 x 3076 = 7952; Skin/VD and Psychiatry: 2 at district headquarters = 2 x 600 = 1200; Ophthalmology: 2 at district headquarters and 1 at CHC = 2 x 600 + 1 x 3076 = 4296"

Table 2.8**Teaching faculty requirement and production of fresh postgraduates annually for medical colleges in India**

Specialty	No. of faculty required annually	Average No. of Postgraduate Degrees awarded during 1999–2000 & 2000–2001*	Shortfall in teaching faculty required annually
Anatomy	89	23	66
Physiology	89	29	60
Biochemistry	51	21	30
Pathology	126	141	-15
Microbiology	53	57	-4
Pharmacology	75	33	42
Forensic Med.	52	11	41
Community Med.	98	39	59
General Medicine	99	346	-247
General Surgery	99	324	-225
Pediatrics	52	162	-111
TB & Chest Dis.	23	32	-9
Skin & VD	23	53	-30
Psychiatry	23	28	-5
Orthopedics	52	123	-71
ENT	23	76	-53
Ophthalmology	23	126	-103
Gynae / Obs	67	286	-219
Radiodiagnosis	67	82	-15
Radiotherapy	35	11	25
Anesthesia	96	197	-100
PMR	32	2	30

*** Source: Health Information of India 2000 & 2001, Ministry of Health & FW, Government of India, 2003"

"Many Medical Colleges also impart M.Sc. courses in pre- and para-clinical specialties, but there was no information on these aspects and these have not been considered for the calculations

"After obtaining a postgraduate degree a person may join as a teaching faculty, provide health services in public or private sector, or migrate to another country. There could also be attrition due to non-practicing of medicine. These factors have not been factored. This interpretation is also based on the assumption that the doctors, after obtaining postgraduate degree, would opt first for a teaching post and only after such posts have been filled would doctors opt for joining the health care delivery system.

Table 2.9**Distribution of medical colleges across states and regions, 1950–2004**

Category of States	PCI/Rs GDP-1998–99	1950	1990	2004
Category I – Bihar, Jharkhand, Orissa, UP and Uttaranchal	7,955	610 (14.4)*	2016 (12.2)	2466 (10.3)
Category II – Assam, Arunachal Pradesh and NE, MP, Rajasthan, J&K, Chattisgarh, WB, Tripura, Sikkim	12055	1205 (28.5)	2916 (17.6)	3466 (14.4)
Category III – AP, HP, Karnataka, TN, Kerala	15,840	950 (22.4)	6340 (38.2)	10,700 (44.6)
Category IV – UT's, Gujarat, Haryana, MH, Punjab	27,757	1470 (34.7)	5313 (32)	7373 (30.7)

Source: Ajay Mahal & Mohanan, 2004; * Figures in parantheses are percentages of total

Moreover, payment of high fees and other costs for education compel most doctors to accord priority to earn money and a lesser inclination to work in rural areas or in primary care settings. There are trade-offs in this policy of privatizing medical education—while it saves government the financial resources required for establishing medical colleges, the high cost of education in private colleges contributes to the increasing cost of care, forces doctors to stay in urban towns and practice medicine of the type that will remunerate them adequately.

Addressing these issues would require a comprehensive approach and a package of interventions based on the careful calculation of the trade-offs involved: increase public investment in the poor performing states to establish the required number of medical and nursing schools; or provide incentives to the private sector to do so and regulate them effectively to ensure that there is no compromise in standards and quality of care; or provide attractive fellowships to merit students from the deficit states to study; or increase payments to encourage doctors to migrate to the deficit states and/or expand insurance to stimulate conducive market conditions, etc. Whichever be the way, in the short run, substantial public investment will be required for any option to be feasible.

Table 2.10 shows the state-wise number of required and existing medical colleges.

Acute shortage of faculty

There is an overall shortage of teachers entailing adverse impact on the quality of instruction. The situation is so severe that even governments feel compelled to indulge in irregular practices of mass transfers of teachers of different specialties from one college to another on a temporary basis at the time of inspection by the Medical Council of India (MCI). Keeping fake rolls of medical teachers and showing expenditure under the salary head is a common tactic adopted by managements of private colleges. The problem of shortage of medical teachers is particularly acute in pre- and para-clinical specialties such as Anatomy, Physiology, Biochemistry, Pathology, Microbiology, Pharmacology, Forensic Medicine and Community Medicine (Table 2.11).

Quality of training in medical colleges

Compounding the problem of overall shortage of teachers is the problem of vacancies in faculty positions on account of the time-consuming and tedious procedures for filling them up.

Table 2.10**State-wise number of required and existing medical colleges**

S. No.	State / Union Territory	No. of Medical Colleges required @ one per 50 lakh population	Existing No. of Medical Colleges	Difference between existing and required no.	Total number of seats
States / UTs with more than required no. of Medical Colleges					
1	Karnataka	11	31	20	3905
2	Maharashtra	19	38	19	4200
3	Andhra Pradesh	16	27	11	3475
4	Kerala	7	14	7	1600
5	Tamil Nadu	13	20	7	2315
6	Pondicherry	0	5	5	475
7	Gujarat	10	13	3	1625
	Sub-total	76	148	72	17595
	% of total		64.6		68.8
States / UTs with adequate no. of Medical Colleges					
8	Delhi	3	5	2	560
9	Jammu & Kashmir	2	4	2	350
10	Punjab	5	6	1	520
11	Himachal Pradesh	1	2	1	115
12	Chandigarh	0	1	1	50
13	Goa	0	1	1	100
14	Sikkim	0	1	1	100
15	Uttaranchal	2	2	0	200
16	Arunachal Pradesh	0	0	0	
17	Manipur	1	1	0	100
18	Mizoram	0	0	0	
19	Nagaland	0	0	0	
20	Andaman & Nicobar	0	0	0	
21	Dadra & Nagar Haveli	0	0	0	
22	Daman & Diu	0	0	0	
23	Lakshadweep	0	0	0	
24	Haryana	4	3	-1	250
25	Tripura	1	0	-1	
26	Meghalaya	1	0	-1	
	Sub total	20	26	6	2345
	% of total		11.35		9.17
States / UTs with deficit of Medical Colleges					
27	Chhattisgarh	4	2	-2	200
28	Jharkhand	5	3	-2	190
29	Rajasthan	11	8	-3	800
30	Assam	6	3	-3	391
31	Orissa	7	3	-4	364
32	Madhya Pradesh	13	7	-6	820
33	Bihar	16	8	-8	510
34	West Bengal	17	9	-8	1105
35	Uttar Pradesh	35	12	-23	1262
	Sub-total	114	55	-59	5642
	% of total		24.017		22.05
	TOTAL	210	229		25582

Source: Medical Council of India

Table 2.11**Number of teaching faculty for undergraduate Medical education in 229 Medical Colleges**

Subject	For U/G Edu.	Additional for P/G Edu.	Total	No. of new faculty members required annually
Anatomy	2346	315	2661	89
Physiology	2346	315	2661	89
Biochemistry	1216	315	1531	51
Pathology	3476	315	3791	126
Microbiology	1273	315	1588	53
Pharmacology	1931	315	2246	75
Forensic Med.	1230	315	1565	52
Community Med.	2618	315	2933	98
General Medicine	2961	0	2961	99
General Surgery	2961	0	2961	99
Pediatrics	1545	0	1545	52
TB & Chest Dis.	687	0	687	23
Skin & VD	687	0	687	23
Psychiatry	687	0	687	23
Orthopedics	1545	0	1545	52
ENT	687	0	687	23
Ophthalmology	687	0	687	23
Gynae / Obs	2003	0	2003	67
Radiodiagnosis	1688	315	2003	67
Radiotherapy	744	315	1059	35
Anesthesia	2575	315	2890	96
PMR	959	0	959	32
Total	36852	3465	40317	1344

N.B.: No. of teachers estimated on basis of norms from Medical Council of India
 (1) This is the number of subject-wise faculty members required for imparting undergraduate training in the Medical Colleges where undergraduate medical education is being imparted.
 (2) There are at least 105 Medical Colleges imparting undergraduate medical education that also impart postgraduate training. As per MCI's Postgraduate Medical Education Regulations, 2000 for conducting postgraduate courses, extra staff is required in the departments of Anatomy, Physiology, Biochemistry, Pharmacology, Pathology, Microbiology, Community Medicine, Radiodiagnosis, Radiotherapy, Anesthesia and Forensic Medicine (four additional teaching faculty in each of these departments, in addition to those prescribed for undergraduate education) “
 (3) There are also some institutions that impart only postgraduate training, and information on faculty requirement of such institutions has not been incorporated in this table”

The second major hindrance affecting the quality of instruction is the private practice that most states allow their teaching faculty, despite advice to the contrary by the MCI and most professional bodies. Banning private practice is essential to improve the quality of instruction and patient care. This will however, require policies to enhance payment to specialists, which in the current environment seems justified, if we wish to ensure retaining the best and the most skilled and not compel them to migrate to the corporate sector or abroad.

Notwithstanding shortages in faculty and the impact it has on the quality of training, colleges continue to admit over 150 students annually due to court orders or political pressure. Large numbers affect the quality of instruction as they do not get adequate exposure and acquire enough proficiency to handle most problems independently. Besides, many private sector colleges do not even have sufficient caseload of different diseases.

Inadequate budgets, limited avenues and incentives for the teaching faculty to undertake research or introduce innovative teaching methods, delayed promotions (by over 10-15 years in some instances), etc. have had a demoralizing effect. In such an environment, private medical colleges willing to pay higher salaries and other benefits have successfully drawn away several senior teaching faculty from government colleges. Combined with long drawn recruitment procedures that an average of two years to find replacements, the overall impact on training has been serious, calling for appropriate measures to redress the situation. It is indeed heartening that despite these structural and systemic problems, 7 out of the 10 medical colleges ranked for excellence in medical education by an independent agency are government institutions. This reflects not only the commitment of the teaching faculty working under adverse conditions but also the immense potential to further improve with incremental correctives and funding support.

The experience of CMC, Vellore compels the need to revisit the policy of what is referred to as the Re-orientation of Medical Education (ROME) Programme that was launched in 1977 to prepare doctors to work in rural communities. It is important to revive that scheme. One way could be to have every medical college mandatorily adopt one block and run the health system-subcentre to CHC- with the budget and responsibility of providing patient care in that block delegated to the college. See Box 2.8

Box 2.8

Christian Medical College (CMC), Vellore is an institute of excellence for medical education. It admits 60 students annually through a rigorous selection procedure that includes an assessment of the aptitude and suitability of the candidate. The tuition fee is very low. There is considerable emphasis on community-based training through the Community Health and Development (CHAD) Programme under which faculty members go to the field practice area and provide services to people and training to students. Due to the emphasis on community-based training, two-thirds of the MBBS alumni of CMC work in India and 80% of them in non-metropolitan areas of the country. Although the payment structure for faculty members is not at par or competitive with the private sector, they are provided excellent housing facilities and a good working environment, which provide motivation and job satisfaction. This suggests that the impact of training and non-financial incentives are more important than financial incentives for motivating doctors to work for the poorer segments of society and in non-metropolitan areas.

Regulation of training in medical colleges

Both the Medical Council of India (MCI) and state medical councils have failed to ensure maintenance of uniform standards of medical education, at both the graduate and the postgraduate levels. There is an urgent need to have suitable mechanisms to ensure quality in medical education through more stringent regulation for entry and also enforce renewal of registration of medical practitioners after every five years based on the attendance in Continuing Medical Education (CME) Programmes.

Payment systems and incentive structures for doctors and nurses

Liberalization of the global environment and opening up of national borders is exacerbating the “brain drain” and “human capital flight” in the name of “professional mobility”, particularly in Africa where in the health sector, the situation has resulted in the virtual collapse of their delivery systems. In Zambia for example, of the 600 doctors so far trained, only 45 are available, rest having migrated to the west, while in Ghana, only a half are in the country. Such migration entails severe costs: the non availability of critical human resources virtually means a denial of care, particularly for the poor in remote areas; as per UNCTAD estimations migration of every

one professionally trained doctor in Africa cost \$ 184,000 loss in investment, loss in income tax earnings as such professionals fall in the high income brackets and finally highly skilled personnel normally work sub optimally in the high income countries. (Marchal, Kegels, 2003)⁶

India is not so badly off as Africa. Yet there are some lessons. As noted earlier there is a steady migration of skilled personnel from government to private and abroad, which could mean non availability of quality care to the poor who frequent government facilities or in States which have low incentives to work. In fact, with the large number of opportunities opening up for employment in foreign countries, particularly for nurses, it would be to India's advantage to focus on expanding the number of colleges and nursing schools alongside efforts to ensure good quality to make them employable. This is necessary as, for example, in AP with the push given to IT, several computer training schools were established. In the absence of any quality checks, most students are found to be unemployable, with the opportunities going to persons from other states. In other words, mere numbers count for little, their abilities do. Secondly, serious thought also needs to be given to improve payment systems and related incentives such as housing and working conditions to retain skills required for the health system in India. See Box 2.9

Box 2.9

Not Arresting the progressive erosion in quality will affect India in two ways :

- Fewer number (in proportion to our capacity) will be able to make the grade for entry into global markets
- While the best continue to go abroad or work in corporate hospitals that attend to the affluent sections of society, NRIs or foreign clientele, there is a danger of duality in quality and consequent inequity in care.

Integration with indigenous systems of medicine—case for integrated medicine

There were 691,470 Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) practitioners registered in India as on 1 January 2002. Committees set up by the government have highlighted the competitive advantage of ISM doctors due to their easy accessibility to and acceptability by the people, especially in rural areas. There is a need to ‘integrate’ ISM in the health care delivery system. Time has come to recognize the strengths we possess and the need to focus on bringing ISM back centre stage. Not only must time-bound action be initiated to include exposure to ISM at the undergraduate level but also upgrade the existing AYUSH colleges and offer three-year PG courses for MBBS students. Likewise, action also needs to be initiated to formulate curriculum for integrated medicine as it will take almost 10 years for it to become fully internalized allopathy and Ayush into the system of medicine practised in the country today.

Of late, some coordination between the two systems of medicine has been attempted by the Central Government, and clin-

ics of Ayurveda, Unani and Homeopathy have been set up at some allopathic hospitals and dispensaries. Under the RCH Programme, 7 Ayurvedic and 5 Unani medicines were included in the drugs kit on a pilot basis and distributed in 9 states and 4 cities. However, due to improper orientation of the health personnel, utilization of these medicines is reportedly tardy.

Human resources determine the appropriateness and quality of care. It is in the ultimate analysis, the attitudes, practices, knowledge, skills and values, that the providers possess that influence the nature of the health system-how appropriate, rational, efficient and affordable. Priority attention to addressing some of the initial issues facing these components is accordingly required.

Access to essential drugs and medicines

Demand-side issues

Drugs are one of the three cost drivers of the health care system. On the demand side, drugs and medicines form a substantial portion of the out-of-pocket (OOP) spending on health by households in India. Estimates from the National Sample Survey (NSS) for the year 1999-2000 suggest that about half of the total OOP expenditure is on drugs. In rural India, the share of drugs in the total OOP is estimated to account for nearly 83%, while in urban India, it is 77%. The share of drugs in the total inpatient treatment in rural and urban India is around 56% and 47%, respectively for the same period. On the other hand, the component of drugs and medicines accounts for a mere 10% of the overall budget of both the Central and the State Governments. The Central Government's share of drugs in its total health budget is about 12%.

Supply-side issues

The pharmaceutical market, both bulk drugs and formulations, is estimated to be worth Rs 35,000 crore in 2003-04 as against Rs 10 crore in 1950, of which the market for bulk drugs is estimated at Rs 7,779 crore. As against the frequently quoted figure of 20,000 manufacturing units in the country by industry circles, the Mashelkar Committee identified 5,877, based on the number of production (licensed) units in the country. Besides, there are around 10,400 units involved in the manufacture of cosmetics, surgicals, blood banks, etc. which are ancillary units. The capital investment is estimated at about Rs 4000 crore. The annual compound growth rate of production during the past three decades has been quite high with production of bulk drugs registering 12.38% growth; formulations 11.05% and total production 11.17% (in current prices)

However, the quantum growth in the industry is replete with uneven growth. Ten of the top 25 drugs sold in India are non-essential, irrational or hazardous. The market for drugs is highly concentrated. Of the 32 therapeutic classes analysed, in 19 therapeutic classes, about four players dominate the market with market shares ranging from 30% to more than 90%. In the remaining 13 therapeutic classes, 5-8 compa-

nies have market share in each therapeutic market in the range of 30%-70%. The element of competition is thereby restricted in the therapeutic markets, which could have implications on price setting.

Price control and trends in drug prices

Given the critical nature of drugs in overall health care, since 1970s, India has put in place some production and price controls. Over the years, however, production controls have been lifted entirely and price controls are also being eased out. At present, only 76 drugs, accounting for one-fourth of the total drug market in terms of value are price controlled, as against 347 in 1979.

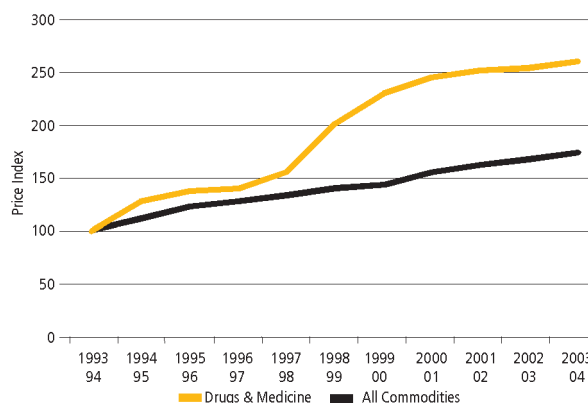
Analysis of price trends shows that drug prices are outstripping the prices of all commodities as can be seen in the graph below (Fig. 2.4).

An examination of the price trends of 152 drugs (consisting of 360 formulations) during 1994-2004 reveals that 11 antibiotic drugs witnessed a price rise ranging between 1%-15% annually. In the case of anti-tuberculosis drugs, 8 of 10 drugs have shown an annual price rise of 2%-13%. Anti-malarial drugs registered mixed price trends. There is a general price rise among drugs for cardiac disorders-the sub-therapeutic category of cardiovascular drugs recorded a per annum price rise of 2%-16%; anti-anginals 6%; and peripheral vasodilators and anti-hypertensives 1%-7% during the same period.

Drug retail margins are extremely high in the pharmaceutical market. This becomes evident when one compares the market price vis-à-vis the pooled procurement price of drugs. The State Governments of Tamil Nadu, Delhi and Rajasthan have been pursuing a transparent and efficient public drug procurement policy. This has resulted in substantial savings to the exchequer leaving them in a better position to buy more drugs within their limited budgets.

Fig 2.4

WPI on Drugs and Medicines and WPI on All Commodities 1993-2004



Source : Monthly Statistics, RBI Various Issues.

Box 2.10

Brazil in its newly amended patent policy, allows for local production by providing licence to domestic companies if the foreign patented products are not produced locally. The Brazilian patent law requires a foreign patentee to manufacture a product locally within the stipulated three years of the grant of patent. Importing such patent-protected product is not considered to be 'working of patents' in the Brazilian law. Under this provision, Brazil granted domestic production of generic anti-HIV/AIDS drugs, which has been contested by drug-manufacturing MNCs. With the heat of international pressure mounting heavily on the MNCs, it had to retreat from the case registered at WTO against Brazil. With increasing disease burden of HIV/AIDS, drug-resistant T.B., malaria, mental diseases conditions, etc. the new patent regime is a cause for grave concern in the near future. For instance, India today has 5.1 million AIDS/HIV cases and approximately 70 million people suffer from various mental disease conditions. If 20% of the HIV patients and the entire suffering population from mental diseases were to be provided medicines, then the respective cost to buy these in the open market, in current prices, are Rs 2,931 crores, and Rs 12,516 crore per annum, respectively. Since many of the recently introduced new drugs relating to these disease conditions would come under the scanner of new patent regime, the total annual cost of the regimen could rise phenomenally.

Weak regulatory environment

Spurious/substandard drugs have been the hallmark of the Indian pharmaceutical market. Poor regulatory systems, due to inadequate and weak drug control infrastructure at the State and Central levels is the major reason for the existence and sustenance of substandard drugs. Specifically, the problem lies in inadequate testing facilities, shortage of manpower, non-uniformity in enforcement, etc. Only 17 of the 31 States and Union Territories have drug-testing facilities. The imperatives of putting in place a transparent and effective regulatory mechanism is all the more important in view of the thriving market for health food/nutritional supplements/herbal products, etc., which are passed on as non-drug category products but have chemical ingredients. In addition, in view of the development of India as an emerging market for drug development and clinical research, there is an urgent need to strengthen the regulatory structure in the country.

Product patent regime

India has moved into a product patent regime in 2005 complying with the Trade-Related Intellectual Property Rights (TRIPS) provisions of the World Trade Organization (WTO). The earlier process patent regime helped India develop an indigenous market with low price of drugs. The new product patent regime, however, is likely to change the course of the Indian pharmaceutical market with potential to affect availability and price increase affecting access of essential drugs such as those that may be needed by diabetics, mentally ill

patients or even those who have developed resistance to TB or malarial drugs. With these diseases affecting the poor too, any increase in prices can entail hardship that they may not be able to sustain, calling for state intervention to provide them with safeguards.

Will R&D investment rise if the product patent regime is put in place now? Even assuming that MNCs would bring in some R&D investment (as research is less costly here) and, in the process, also develop the requisite research infrastructure in India, the prices may still not be affordable, relative to incomes, as the new drugs would come under the patent. However, it is reasonable to assume that since the initial investment for developing the drug is lower in India, the price may be relatively lesser. Yet this is a small comfort for those who are unable to afford even the current prices of generic drugs, calling for a massive intervention by the Government to safeguard access to drugs.

The issue then is to ensure how drug research is given due importance in the product patent era. Publicly supported R&D can be one option. The other option is to support Indian private companies to develop new drugs that are essential to the poor in developing countries. For instance, development of vaccines for preventing TB, malaria, HIV/AIDS, etc. needs to be supported by offering both fiscal and non-fiscal stimulus to public and private laboratories. Financial support to private pharmaceutical companies may be provided conditional to their agreeing to cap drug prices in developing countries for the new drugs or maintaining a minimum quantity of production of essential drugs to ensure regular access etc.

Other options

The (Ayush) Indian Systems of Medicine offer an alternative to some allopathic drugs, for example, yoga as a de-stressing strategy than taking modern drugs. Likewise, for chronic diseases like asthma, Ayush do have drugs that cure and also have a minimal adverse drug reaction. But for Ayush to be used for wider application and accepted as an effective alternative, it will be essential for India to launch on a massive scale a well coordinated research and clinical trials to establish efficacy, safety and replicability.

Box 2.11

A Bangalore-based NGO, FRLHT launched a campaign for home herbal gardens covering about 1.5 lakh households during 1993-2003. Experience showed considerable reduction in morbidity on account of using medicinal plants and immense potential for offering curative and preventive remedies for conditions such as hepatitis, respiratory ailments, skin diseases, wound healing and specific reproductive health conditions. Being low in cost, the concept of such a home herbal garden is seen to be sustainable and replicable. Well-designed and well-organized participatory clinical trials on the efficacy of selected ecosystem-specific species for primary health care need to be initiated.

Foundation For Revitalization of Local Health Traditions, 2005

As per evidence available an estimated an 25% of people seek treatment from Ayush , as it is cost-effective and accessible. The spin-off from encouraging Ayush medicines is that being plant-based materials, they are environment-friendly. Cultivation and collection of medicinal plants from rural areas and their utilization in Ayush drugs can have far reaching effect on the rural economy. By standardizing Ayush drugs clinically for its efficacy, drug reactions, etc. there is great potential for assuring health security, expand domestic markets as also significantly expand exports for earning foreign exchange.

It is clear that assuring access to drugs and medicines is possible only by reducing the unusually high drug spending by households in four ways: (i) bringing all drugs under price control to ensure lower prices for the households and government; (ii) streamlining and putting in place a system of centralized pooled procurement of drugs so that the public health system can save huge costs; (iii) weeding out irrational drugs and irrational combination drugs, and (iv) encouraging Ayush drugs for diseases that have efficacious and low-cost treatment. The case for price control as in Canada is justified on the basis of the drug prices outstripping WPI. Secondly, price control should be on all drugs and not only on essential as that has the implication of the industry switching its production to the non controlled categories, depriving people of access to essential drugs.

There is lack of clarity on the future implications of the new amendment to the Patent Act. If not appropriately ensured to safeguard the interest of the consumers, it could entail adverse implications for access and put pressure on public budgets. The patent amendments still need to clarify issues relating to: (i) the scope of patentability; (ii) cap on royalty payments; (iii) plugging all ambiguities and technical loopholes in the amendment to avoid unnecessary and expensive litigation in future; and (iv) vesting discretionary powers in the patent office in terms of timelines of rules, that affect credibility and objectivity.

Medical devices technology: A case for appropriate policies

The term 'medical technology' encompasses the technological inputs of medical services, i.e. new drugs, medical devices, medical procedures and also the organization of health services themselves. Thus, the development of new drugs to treat people with HIV, the emergence of angioplasty and coronary stents as procedures for coronary artery disease, the development of magnetic resonance imaging (MRI) and positron emission tomography (PET) for diagnostic purposes, are all examples of medical technology.

Unlike developed countries where medical technology has attracted much policy attention and research, in India, concerns regarding medical technology have been by and large limited to pharmaceutical drugs, regulation of diag-

nostics for sex determination of the foetus and corruption in public procurement. Good research under stringent policy frameworks have enabled developed countries to monitor and predict potential impacts of medical innovations on health expenditures, and the pathways through which these expenditures occur. Technological change accounted for more than 20% increase in health spending in the United States of America during 1980-2000, mainly due to increased volume of utilization and higher prices. It is clear that advances in medical technology add to health expenditures.

Studies indicate that increases in the volume of utilization of medical technology are led by three factors: (i) use of advanced medical applications for individuals who otherwise would not have received any services- 'treatment expansion'; (ii) use of medical advances to replace existing procedures/services to patients who would have received the latter- 'treatment substitution'; and (iii) use of medical advances as 'add-on' services to increase the intensity of services provided to patients. Studies indicate that in developed countries, the first and the third factors are the most important for volume increase.

A central question that needs to be addressed is how to find resources to support additional expenditures to provide for benefits from technology. The exercise of defining priorities for the most cost-beneficial technologies is greatly complicated by a number of features of the health care market. First, the priority-setting exercise (and consequent regulations against less socially cost-beneficial innovations) should be balanced against the desire of individuals to choose technologies, when they can afford to do so. Second, there is also the problem of inequalities that might arise because of differential access to medical innovations.

Concerns of medical technology

Technology and costs are a concern for policy-makers. Firstly, there are likely to be continued pressures on the demand side towards adoption of medical innovations, more so due to an increasingly open trade environment, heightened global inter-linkages, increasing awareness of newer medical technologies, rising incomes and the likely spread of voluntary insurance, making medical technology affordable. These tendencies are likely to be further exacerbated by 'medical tourism' that is currently being promoted by the private sector. Second, there will be supply-side pressures, as medical institutions seek to adopt the latest innovations to attract not only customers, but also leading medical professionals who might otherwise choose to practise elsewhere, or migrate. This will probably have a cascading effect on the nature of training provided in medical institutions- more diagnostic-intensive, with presumably less focus on clinical skills. The expanding demand- and supply-side pressures will not only increase the volume but also the prices of new medical technologies. For instance, with India's drug patent regime moving from process patents to product patents, one can expect new drugs to become increasingly more expensive.

The limited public resources currently available to spend on health means that the Central and State Governments in India may need to undertake priority setting for the use and adoption of medical innovations and their diffusion. Large amounts are currently being spent out-of-pocket by households on health care. Tables 2.12 and 2.13 suggest that (i) the use of diagnostic medical devices is increasing over time; (ii) people are paying more often for diagnostic services; and the net result of these tendencies is that the overall share of diagnostic care spending (which is the result of some mix of increased use and increased payment) in total household budgets is also increasing over time; and (iii) there has been a decline in 'free diagnostic service' which necessitates public policy on medical innovation to ensure access.

Performance targets for consultants in corporate/private hospitals may also result in overuse because of internal referrals. One study suggests that an average of 10% of the total expenditure of diagnostic service providers is supported by 'business development' payments to doctors and the share may be as high as 30% for high-end diagnostics such as MRI and CT scans.

Geographical inequality in location of high-end technology

Geographical inequity in the location of diagnostic sites, poor management and low utilization of hi-tech equipment in public hospitals as compared to the private sector are some reasons for increased household spending on diagnostic services. Data for 70 MRI sites suggest a lopsided distribution: 63% (44) of the sample MRIs were located in 5 major cities (Bangalore, Chennai, Delhi, Hyderabad and Mumbai) with a combined population of no more than 450 lakh (or 4.5% of India's population), and composed of the most well-off individuals in India. Thus, one adverse outcome of the introduction of state-of-the-art diagnostic services is inequity in access to high-technology health care, whether valuable or not for health outcomes.

Procedural delays hamper acquisition of technology in the public sector

It is four times easier to commission an advanced medical facility in a private setting than in a public setting, which reduces public trust in service delivery and promptness. Delays occur at every stage in the ordering and delivery process at the public hospital—beginning from the decision to buy the type of equipment needed, clearance of payments to the supplier, incomplete electrical and other pre-installation preparatory work at the time of acquisition of the equipment. This does not include the time taken for 'needs assessment', a process that could take years at a public hospital. In addition, utilization rates following installation are not always up to the mark, as indicated by the number of patients scanned by MRI units at public hospitals. Studies confirm that relative to private facilities, there is a larger 'down-time' of equipment in public hospitals, which results in fewer operational hours as well poor functional status of the equipment.

The causes of the poor functioning of the public sector relative to the private sector are as follows:

- Unavailability of personnel needed to operate the equipment;
- Poor coordination of procurement and installation processes;
- Poorly motivated and inadequately trained staff and a lack of accountability among them;
- Financial constraints, explaining why it takes a longer time to get equipment in public facilities required;
- Delay in reporting of problems;
- Sometimes, poor follow-up and/or financial shortages mean that government agencies do not insure equipment once the warranty period has expired. This may render the equipment non-functional without any financial redress if it runs into a technical hitch. These problems are particularly severe in public facilities that are located outside the major metropolitan areas, since their financial and human resource constraints are even greater.

Table 2.12

Proportion of patients getting an X-Ray/ECG/ESG scan and patients getting an X-Ray/ECG/ESG, by payment mechanism, All India, 1986–87 and 1995–96

Care type and residence	1986–87 (%)			1995–96 (%)		
	Patients getting X-ray/ECG/ESG	Free	Payment	Patients getting X-ray/ECG/ESG	Free	Payment
Outpatient						
Rural	2.9	21.58	73.14	3.61	9.14	90.51
Urban	5.47	29.16	65.35	6.34	11.16	87.75
Total	3.57	24.63	70.01	4.41	9.69	89.76
Inpatient						
Rural	33.63	39.69	57.19	43.06	35.75	53.68
Urban	45.16	46.22	50.08	52.07	41.94	44.37
Total	36.82	41.91	54.78	46.39	38.01	50.28

ECG: electrocardiogram; ESG: electrosonogram
Source: NSSO household surveys of 1986–87 and 1995–96

Table 2.13**Diagnostic, health and total expenditure of Indian households, 1993–94 and 1999–2000**

Expenditure categories	1993–94			1999–2000		
	Rural	Urban	Rural + Urban	Rural	Urban	Rural + Urban
Inpatient						
Diagnostic Exp /Total HH Exp (%)	0.05	0.05	0.05	0.09	0.1	0.1
Diagnostic Exp /Total IP Exp (%)	5.47	3.99	4.85	6.82	7.16	6.95
Total IP Exp/Total HH Exp (%)	0.89	1.19	1	1.37	1.44	1.4
Outpatient						
Diagnostic Exp /Total HH Exp (%)	0.06	0.09	0.07	0.15	0.15	0.15
Diagnostic Exp /Total OP Exp (%)	1.23	2.52	1.6	3.08	4.21	3.43
Total IP Exp/Total HH Exp (%)	4.55	3.42	4.15	4.72	3.62	4.31
Inpatient + Outpatient						
Diagnostic Exp /Total HH Exp (%)	0.1	0.13	0.11	0.24	0.26	0.25
Diagnostic Exp /Total OP + IP Exp (%)	1.92	2.9	2.23	3.92	5.05	4.29
Total IP + OP Exp/Total HH Exp (%)	5.44	4.6	5.15	6.09	5.06	5.71

HH = household; IP = inpatient; OP = outpatient

"Source: Consumer Expenditure Surveys of the National Survey Sample Organization, 1993–94 and 1999–2000"

For more effective use of medical devices in India, an alternative scenario of increased delegation of some responsibilities of the public sector to private providers could be considered, as experimented in West Bengal. Private-public partnerships in the provision of diagnostic services, with the private partner operating the equipment in the space made available to it in the premises of the public hospital, may be feasible. The chief gain to the private provider is in terms of a ready clientele, whereas the public sector hospital benefits in terms of proportion of patients getting free/fairly priced services and functioning equipment.

Problems with the medical device supply and maintenance industry in the private sector: Need for regulation

The private sector has its own problems, as reflected in the overuse and misuse of diagnostics and other medical devices in India. There is no effective quality regulation on the sale of high-technology medical devices, with the existing BIS (Bureau of Indian Standards) mark norm limited to a small subset of low-cost medical equipment. Consequently, substandard second-hand medical devices are currently flowing into and floating around the country. The only regulation that currently exists is the protection relating to radiation. However, there is little or no control on what the equipment does relative to its claimed effects, its technical specifications, etc. Availability of good quality spare parts is also a serious problem faced by both public and private health service providers in India. While the problem is especially acute for older equipment, spare parts for which are no longer made by the original manufacturer, there are a lot of equipment suppliers who simply do not deliver follow-up services, making the search for alternative providers a costly exercise. There is severe shortage of technical experts for repairing medical equipment.

A committee of the Indian Council of Medical Research (ICMR) recently proposed the setting up of an Indian Medical Devices Regulatory Authority (IMDRA) as an independent authority, but piggy-backing it on publicly available information on licensing status and medical device performance from either the European Union or the US Food and Drug Administration (FDA), or both. Once the basic quality requirements are met, issues of cost-effectiveness become pertinent. In addition to a better regulatory approach to the medical device market, the government could carry out other health policy-related activities to address several of the inefficiencies discussed above.

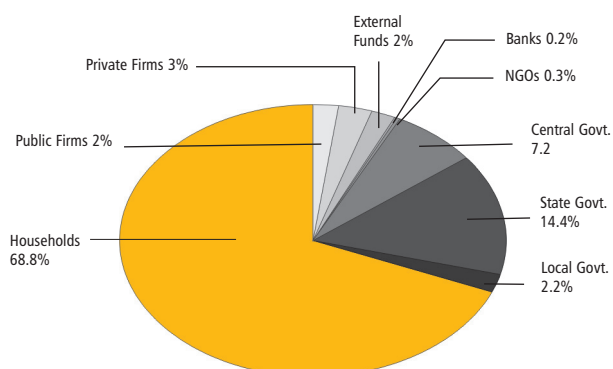
Financing public health in India

Financing is the most critical of all determinants of a health system. The nature of financing defines the structure, the behaviour of different stakeholders and quality of outcomes. It is closely and indivisibly linked to the provision of services and helps define the boundaries of the system's capability to achieve its stated goals. An understanding of the financing mechanisms in this sector is needed as the way in which the sector is financed determines the effectiveness of service delivery.

Source of funds in the health sector

National health accounts:

Estimates using the National Health Account framework suggest that the health expenditure in India during 2001–02 was approximately Rs 108,732 crore, accounting for 4.8% of the GDP at the current market price (Figure 2.5). Out of this, public spending is estimated to be 1.24% as proportion to GDP. This figure of 1.24% includes the expenditures incurred

Fig 2.5**Share of entities in total health spending during 2001-02**

Total spending: Rs 108,732 crore out of a GDP of Rs 22,71,084 for 2001-2002

on health by all central government departments (health, defence, labor etc.), all state departments, local bodies, public enterprises, including banks and external funding for health. Spending by the health departments at the Central and State levels is about 0.9% of GDP.

As per consumer expenditure data, households spend 5%-6% of their total expenditure and 11% of non-food consumption expenditure on health. Data also show an increasing growth rate of 14% per annum in household health spending. It may be noted that almost half the spending was just on outpatient care (Table 2.14).

There are wide variations in household spending across states. While Kerala spends an average of Rs. 2548 (2004-05 current prices) per capita per annum, households in Bihar, one of the poorest and most backward state spent Rs. 1021

per capita per annum accounting for 90% of the total health expenditure in the state during the year 2004-05. Household spending analysis is complex and needs to however be read along with other factors. For example, households in Tamil Nadu spend barely Rs.566 percapita per annum accounting for 60% of total spending – indicative of the strength of the public sector – (Box 2.12) Orissa households spend Rs.786 per capita which accounts for nearly 80% of total spending. Besides, during 2001-02, the proportion of public expenditures (Centre + State health departments) to GDP was estimated to be 0.9% with central share being 20%. In 2004-05 the proportion to GDP continued to be the same but the ratio between Centre to States changed,

Box 2.12

Dharmapuri district is one of the most backward and drought-prone areas of Tamil Nadu, with a population of 2.9 million of whom over 70% are agriculture labourers and nearly a quarter belong to the socially deprived sections. A household survey covering 2475 households undertaken in 3 blocks of this district in May 2004 showed that among the illiterate, lower caste and class population, the majority sought treatment from public facilities on grounds of poverty, the proportion reducing with education and income. A negative association between the standard of living and expenditures on treatment was also observed, with higher income groups paying a median of Rs 122 and lower income groups paying Rs 88 for routine outpatient treatment, and Rs 3893 against Rs 1452 for chronic ailments such as hypertension, diabetes, respiratory problems, with more than 50% of them suffering for over two years. This shows the insurance function of public investment in sheltering the poor from incurring higher expenditures and also establishes the association between quality and quantum of public investment in health services affecting household expenditures, made clearer when compared to Uttar Pradesh and Bihar.

Table 2.14**Household health expenditure by different sources of care in India (1995-96 to 2003-04)**

Type of service	1995-96	2001-02	2003-04	Growth rate
Outpatient—rural	16692.96	34290.99	43590.87	12.75
Outpatient—urban	7251.45	16904.82	22415.01	15.15
Inpatient—rural	3030.04	8536.86	12057.25	18.84
Inpatient—urban	2092.9	5150.72	6954.1	16.19
Childbirth/delivery	1654.22	2258.14	2504.97	5.32
Antenatal care	1053.9	2383.27	3128.22	14.57
Postnatal care	390.85	1028.1	1419.21	17.49
Immunization	241.02	535.61	698.95	14.23
Contraceptives	207.14	422.74	536.22	12.62
Self-care	638.83	1247.47	1559.23	11.8
Total	33253.31	72758.71	94457.19	13.94

Source : Estimated from the 52nd Round of the National Sample Survey (NSS), using 2001 Population Census and applying growth rates worked out from 50th and 55th CES Rounds of NSS

with the central share accounting for almost one third of total expenditure. (Table 2.15).

External aid to the health sector, government and NGOs, is 2.0% of the total health spending. Similarly, though the emergence and growth of NGOs have received much attention in India in recent years, its contribution to the health sector is a negligible 0.3%. As financial intermediaries, social insurance accounts for around 2.36% of the total health budget in the country, with a substantial contribution of the Employees State Insurance Scheme (ESIS). While community insurance is a non-starter, the share of private voluntary insurance schemes is less than 1% of the total health budget.

Public financing of health

The primary source of public financing is the general tax and non-tax revenues. These include grants and loans received from both internal and external agencies. This pool of resources is used to finance the Centre's and States'

Table 2.15**Household, public and total health expenditure in India (2004–05)**

States	Household Exp. (Rs. Crores)	Govt. Exp. (Rs. Crores)	Other Exp. (Rs. Crores)	Aggregate Exp. (Rs. Crores)	PC HH Exp. (Rs.)	PC G. Exp. (Rs.)	PC Other Exp. (Rs.)	PC Exp. (Rs.)	HH as % of THE (%)	PE as % of THE (%)	OE as % of THE (%)
Central Govt.	0	14819	730	15549	0	137	7	144	0	95.3	4.7
A. P.	6441	1696	640	8777	820	216	82	1118	73.38	19.39	7.29
Arun. Pradesh	430	67	0	497	3776	589	0	4365	86.51	13.49	0
Assam	3054	672	52	3778	1089	239	19	1347	80.84	17.78	1.38
Bihar	11854	1091	202	13147	1021	124	23	1497	90.17	8.3	1.53
Delhi	1004	721	55	1780	664	476	37	1177	56.41	40.48	3.11
Goa	524	116	22	662	3613	798	153	4564	79.17	17.48	3.35
Gujarat	4893	996	424	6313	920	187	80	1187	77.51	15.78	6.71
Haryana	3385	421	175	3981	1518	189	79	1786	85.03	10.56	4.4
H.P.	2126	306	40	2472	3377	486	64	3927	85.99	12.38	1.63
J & K	1759	471	47	2277	1609	431	43	2082	77.26	20.69	2.05
Karnataka	3847	1267	353	5467	702	231	64	997	70.36	23.18	6.46
Kerala	8373	1048	281	9702	2548	319	86	2952	86.3	10.8	2.9
M.P.	6432	1051	228	7711	746	164	35	1200	83.41	13.63	2.96
Maharashtra	11703	3527	726	15957	1156	348	72	1576	73.34	22.1	4.55
Manipur	420	89	8	517	1680	356	32	2068	81.24	17.2	1.56
Meghalaya	58	94	8	160	242	388	34	664	36.45	58.37	5.18
Mizoram	38	58	0	96	405	623	0	1027	39.39	60.61	0
Nagaland	1024	84	7	1116	4897	404	37	5338	91.74	7.57	0.7
Orissa	2999	684	111	3795	786	179	29	995	79.04	18.02	2.93
Punjab	3493	827	273	4593	1379	326	108	1813	76.05	18	5.95
Rajasthan	3399	1190	267	4855	565	198	44	808	70	24.5	5.5
Sikkim	72	55	0	127	1274	965	0	2240	56.89	43.11	0
T.N.	3624	1590	760	5974	566	248	119	933	60.67	26.61	12.72
Tripura	253	100	13	366	760	301	40	1101	68.99	27.35	3.66
U.P.	17158	2650	550	20359	924	150	31	1152	84.28	13.02	2.7
W.B.	7782	1715	433	9929	931	205	52	1188	78.38	17.27	4.36
U.Ts.	3160	325	227	3712	11168	52	37	598	85.13	8.74	6.12
State Totals	109308	17965	5906	133178	1012	167	54	1233			
GT [GOI+ State]	109308	32784	6636	148727	1012	304	61	1377	73.5	22	4.46

Source : Based on National Health Accounts (NHA), 2001-02

Notes : i) Household Expenditure Based on NHA for the year 2001-02 and extrapolated for 2004-05

ii) Central Govt. expenditure includes transfer to states, other central ministries and central PSUs; and data obtained from Demand for Grants (Provisional), Govt. of India.

iii) Govt. Expenditure includes Central, States, Local Govt., and PSUs; data obtained from States Finances (Provisional), RBI, Various issues

iv) Others include foreign agencies, private firms and NGOs; data relates to 2001-02, which is subsequently extrapolated for 04-05.

v) PC HH Exp. – Per Capita Household Expenditure; PC G Exp. – Per Capita Govt. Expenditure; PC Other Exp. – Per Capita Other Expenditure; HH as % of THE – Household as % of Total Health Expenditure; PE as % THE – Public Expenditure as % of Total Health Expenditure; OE as % of THE – Other Expenditure as % of Total Health Expenditure; C. Govt. – Central Govt.; U.Ts – Union Territories.

programmes. The Central Government plays a catalytic role in aligning the states' health programmes to meet certain national health goals through various policy guidelines as well as financing certain critical components of centrally sponsored programmes implemented by the State Governments. In addition to tax revenues, a meagre amount is also raised through user charges, fees and fines from the sector, and further supplemented through grants and loans received from external sources. In the case of local governments, the respective state governments largely finance their health programmes. Local governments do raise resources through user charges and certain fees, though the quantum varies widely from state to state.

Even though the public sector spending accounts for less than a quarter of the total health spending in India, it plays a major role in terms of planning, regulating and shaping the health services delivery system. Such public provisioning is considered essential to achieve equity and to address the large positive externalities associated with health.

Low and decelerating public health finance

Public spending on health in India gradually accelerated from 0.22% in 1950-51 to 1.05% during the mid-1980s, and stagnated at around 0.9% of the GDP during the later years (of only

the Central and State Governments). In terms of per capita expenditure, it increased significantly from less than Re. 1 in 1950-51 to about Rs 215 in 2003-04. However, in real terms, for 2003-04, this is around Rs 120. Estimates, irrespective of the definition, reveal that the per capita spending by the Government is far below the international aspiration of US\$ 12 recommended for an essential health package by the WDR (World Bank) and \$ 36 recommended by the CMH (WHO). As compared to the levels of spending by countries such as Sri Lanka (US\$ 31) and Thailand (US\$ 71), the spending in India is substantially low. The expenditure by the public sector in these countries is twice that of India. Substantially higher levels of health outcomes, in both Sri Lanka and Thailand, as compared to India, indicate that there is clearly a strong case to markedly increase public sector spending on health (Table 2.16).

As a result of stagnant budgetary allocations, quality of care suffered substantially and adversely affected the utilization of government services by households. Besides, health services that were earlier being provided free were in some cases charged, forcing patients to seek private health care. The results of the National Sample Surveys of 1986-87 and 1995-96 showed a considerable decline in the utilization of public health services by the poor, especially the rural poor. The study also showed that the rich consumed public services three times more than the poor. The ratio of access to admission between the lowest 10% quintile and the richest 10% was reported to be 6.1 and 2.2 between the below poverty line (BPL) and the above poverty line populations. The poor mostly availed services for primary care, which are, to some extent, centrally funded vertical programmes, such as immunization, ANC, TB, Malaria, Leprosy, etc. The inequity in the access to and distribution of public health services has been a concern

because of the extent of impoverishment households face on account of ill health, and catastrophic illnesses in particular.

Public health spending by State governments

Health being a State subject the sector is financed primarily by the State Governments. Public health in the states is also financed through general tax and non-tax revenue resources as the cost recovery from the services delivered has been negligible, at less than 2%. As a result, resource allocation to this sector is influenced by the general fiscal situation of the State Governments. For instance, the implementation of the recommendations of the Fifth Pay Commission during the late 1990s resulted in an increase in the fiscal deficit and a general resource crunch. Evidence from other countries also suggests that whenever there is a fiscal consolidation and stress, social sectors such as health and education are targeted for pruning expenditures and reducing budget allocations.

The figures presented in Table 2.17 confirm the above findings. The budgetary allocations to the health sector during 2003-04 declined by more than 2 percentage points as compared to 1985-86. Despite a reduction in the health budget from 7.02% in 1985-86 to 4.97% in 2003-04, the fiscal deficit as a percentage of the gross state domestic product (GSDP) recorded an increase, implying that allocation to health does not necessarily accentuate fiscal deficit.

Public spending on the health sector in the states increased to about 0.9% of the GDP in 2003-04, from 0.8% in 1975-76 (Fig. 2.6). It was during 1975-85 that public spending on health registered a substantial increase and reached a high of 1.05%. Thereafter, it deteriorated steadily due to general fiscal stress during the late 1980s followed by the reform measures initiated in the 1990s.

The severity of the fiscal strain during the late 1980s forced the State Governments to introduce austerity measures and the soft sectors such as health were targeted for expenditure compressions. Similarly, when

Table 2.16

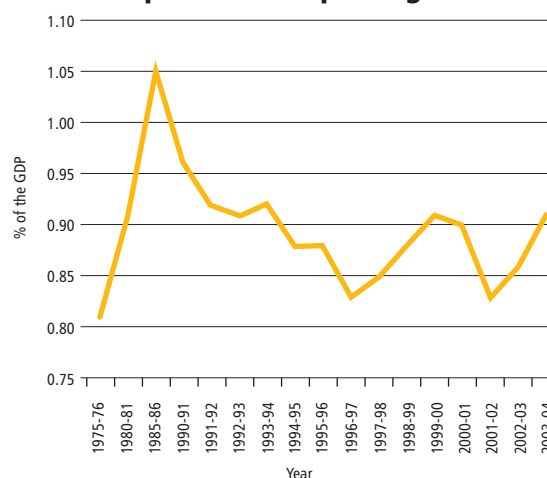
Trends in health expenditure in India

Year	Health Expenditure as % of the GDP			Per-Capita Public Expenditure on Health (Rs).
	Revenue	Capital	Aggregate	
1950-51	0.22	NA	0.22	0.61
1955-56	0.49	NA	0.49	1.36
1960-61	0.63	NA	0.63	2.48
1965-66	0.61	NA	0.61	3.47
1970-71	0.74	NA	0.74	6.22
1975-76	0.73	0.08	0.81	11.15
1980-81	0.83	0.09	0.91	19.37
1985-86	0.96	0.09	1.05	38.63
1990-91	0.89	0.06	0.96	64.83
1995-96	0.82	0.06	0.88	112.21
2000-01	0.86	0.04	0.90	184.56
2001-02	0.79	0.04	0.83	183.56
2002-03	0.82	0.04	0.86	202.22
2003-04	0.86	0.06	0.91	214.62

Note: (i) GDP is at market price, with 1993-94 as the base year
(ii) includes only Central and State government expenditure
Sources: Report on currency and finance, RBI, various issues; Statistical abstract of India, Government of India, various issues; Handbook of statistics of India, RBI, various issues

Fig 2.6

Trends in public health spending



Source: Demand for Grants for various Years

Table 2.17**Share of health in revenue budget of major states (in %)**

States	1985–86	1991–92	1995–96	1999–00	2003–04 (R.E.)	2004-2005 (B.E.)
Andhra Pradesh	6.41	5.77	5.7	6.09	5.21	4.8
Assam	6.75	6.61	6.08	5.25	4.39	4.36
Bihar	5.68	5.65	7.8	6.3	4.84	6.47
Gujarat	7.45	5.42	5.34	5.21	3.68	3.76
Haryana	6.24	4.19	2.99	4.08	3.63	3.35
Karnataka	6.55	5.94	5.85	5.7	4.85	4.18
Kerala	7.69	6.92	6.81	5.95	5.42	5.2
Maharashtra	6.05	5.25	5.18	4.59	4.39	3.89
Madhya Pradesh	6.63	5.66	5.07	5.18	4.89	5.08
Orissa	7.38	5.94	5.42	5.03	4.47	4.58
Punjab	7.19	4.32	4.56	5.34	4.27	4.05
Rajasthan	8.1	6.85	6.18	6.39	5.75	5.73
Tamil Nadu	7.47	4.82	6.4	5.51	5.26	4.91
Uttar Pradesh	7.67	6	5.73	4.42	5.13	5.75
West Bengal	8.9	7.31	7.16	6.3	5.23	5.04
All States	7.02	5.72	5.7	5.48	4.97	4.71

reform measures were initiated at the Centre during the early 1990s, fiscal transfers to states were compressed leading to reductions in health sector allocation. The recommendations of the Fifth Pay Commission in 1997 forced the governments to increase the budget to meet the increased salary cost of public sector personnel. However, these improved allocations could not be sustained beyond 1999–2000 when deceleration set in again. By the year 2001–02, the relative allocation to the sector reached levels closer to those prevailing in 1975–76.

Public spending on health plays an important role in the imperfect health market. It ensures minimum service delivery under the difficult circumstances that prevail in backward states such as Orissa, Uttar Pradesh, Bihar and at the same time, acts as a corrective force for market failures where a number of players deliver services. Studies on health financing emphasize that even though the aggregate spending level in India is comparable to a few developing countries, the levels of per capita public spending on health needs to be stepped up. This gains further importance as a large share of out-of-pocket expenditure by users of public hospitals goes to pay for drugs and diagnostic tests from private providers. This expenditure actually substitutes the government's expenditure. As seen in the Table 2.15, the states that are allocating larger resources per capita are also the states with better health outcomes. Therefore, in states such as Orissa and Bihar, the per capita public health spending needs to be increased more than proportionately because of low levels of out-of-the-pocket spending due to low incomes and poor purchasing power. In fact, the share of out-of-pocket spending in the household expenditure is among the highest in Uttar Pradesh—the state where per capita public expenditure is also low, calling for an increase in public spending. It is, however true that no correlation can be established between per capita

public spending and household expenditure as the actual access to services depends on other factors such as the efficiency with which the system is functioning. In other words, if the health system is inefficient or poorly managed, mere increase of financial resources may have little consequence.

Structure of health sector spending

Analyses of the structure of spending on health by State Governments' show that spending on salaries and wages accounts for more than 70% of health budgets. Nearly 12% is allocated for drugs, medicines, supplies and consumables; 8% for purchase of machinery and equipment, and nearly 5% for maintenance of equipment, building, electricity, rent, taxes, etc. The remaining 5% is spent on other routine expenditures.

The large proportion of the budget allocation for salaries is often criticized as unproductive. It is true that the rising share of salaries has squeezed out other components causing severe imbalances. With the less-than-proportionate increase in the total budget to the sector and political compulsions to not cut the salary head, the non-salary component used for fuel, drugs and medicines, maintenance and repair of equipment and buildings, etc. declined sharply.

User charges as an option

The severe resource crunch for meeting revenue expenditures faced by all the states forced them to levy user charges for services in hospitals. The logic of this step was that user charges have the potential to supplement the declining public budgets (and therefore, quality and coverage). Various models for user charges tried in different countries in the past decade point to the fact that if implemented well, they can raise rev-

enues to improve access, and thereby reduce inequity, and increase the overall efficiency at the facility level. While hospitals in some countries, for example, in South Africa were able to raise revenues through user charges between 15% and 45% of the non-salary revenues and China was able to raise 36% of total health spending, evidence shows that in these countries, utilization of public health services fell because of high user charges. If user charges deter access to both public and private health care, then the goal of raising resources proves counterproductive as it potentially worsens health outcomes.

Though in India—mainly secondary- and tertiary-level hospitals in the public sector—imposed user charges, there are hardly any studies that provide insights into its potential impact. Accordingly, a study of the user fee policy in Andhra Pradesh (AP) and Maharashtra was taken up. These states are recipients of substantial World Bank funding for establishing high quality infrastructure at district, subdistrict and CHC levels, and where user fees was introduced as a part of health sector reform. Data collected from 60 hospitals in Andhra Pradesh by rigorous statistical sampling for three consecutive financial years from 2001–02 to 2003–04 were analysed.

Findings of the study highlight three important aspects: First, due to the fiscal crises in AP, there was a noticeable decline in budgetary support to the Andhra Pradesh Vaidya Vidhana Parishad (APVVP), from 16.7% in 2001–02 to 13% in 2002–03 to about 10% in 2003–04, making user charges an important source of revenue for APVVP hospitals and not an independent, supplementary source of additional revenue (Table 2.18). Second, the aggregate utilization of funds from user charges was low (except in 2003–04), ranging from 12.8% to 53.5% in Telangana (the more backward part of the state), during 2001–04 compared to 82.8% to 93.5% in the Andhra region during the same period (Table 2.19). And third, the number of poor accessing public health facilities fell, particularly for inpatient services (Table 2.20).

Table 2.18**User fees in a sample of APVVP hospitals, by region, 2001–04**

Region and expenditure	2001–02	2002–03	2003–04
Andhra			
User fee revenues (Rs in Lakh)	36.52	62	82.13
User fees/total expenditure (%)	2.1	3.15	4.18
User fees/total non-salary expenditure (%)	15.5	21.56	35.36
Rayalseema			
User fee revenues (Rs in Lakh)	11.5	35.72	44.21
User fees/total expenditure (%)	1.08	3.31	3.39
User fees/total non-salary expenditure (%)	9.85	26.18	37.75
Telangana			
User fee revenues (Rs in Lakh)	43.85	86.71	106.2
User fees/total expenditure (%)	2.22	3.79	4.47
User fees/total non-salary expenditure (%)	18.11	26.33	38.16

Source: Mahal's (2005) estimate, using APVVP data

Table 2.19**Proportion of User fee revenues utilized by the APVVP (trends, 2001–04)**

States/region	2001–02	2002–03	2003–04
All Andhra region	42.5	53.3	72.7
Andhra	82.8	90.5	93.5
Rayalseema	27.9	52.9	80.1
Telangana	12.8	26.9	53.5

APVVP: Andhra Pradesh Vaidya Vidhana Parishad

Source: Authors' calculations, using APVVP data.

We have assumed that the utilization rate for user charges is the same as the utilization rate for the total of user charges and stoppages since both are in the same bank account and under the control of the hospital committees attached to the hospitals.

Table 2.20**Proportion of total utilization accounted for by the poor in AP, by region and type of service, 2001–04**

State/Region	Services	2001–02 (%)	2002–03 (%)	2003–04 (%)
All ANDHRA PRADESH				
	Inpatients	92	79	65
	Outpatients	83	75	68
	Surgeries	82	79	74
	Deliveries	74	62	53
	Laboratory Tests	85	79	78
	Diagnostic Tests	64	62	63
Andhra				
	Inpatients	90	81	71
	Outpatients	80	81	81
	Surgeries	72	75	67
	Deliveries	65	66	56
	Laboratory Tests	83	75	73
	Diagnostic Tests	72	73	67
Rayalseema				
	Inpatients	97	82	58
	Outpatients	92	71	57
	Surgeries	84	63	56
	Deliveries	72	48	44
	Laboratory Tests	95	92	90
	Diagnostic Tests	65	63	66
Telangana				
	Inpatients	89	75	67
	Outpatients	79	74	64
	Surgeries	95	95	92
	Deliveries	85	67	56
	Laboratory Tests	77	69	69
	Diagnostic Tests	56	52	56

Source: Mahal's (2005) estimate, using APVVP data

Box 2.13**User Fees in Government Hospitals in Maharashtra**

User fees were introduced in secondary hospitals of Maharashtra as part of the reform process supported by the World Bank. Unlike Andhra Pradesh, the quality of data was poor. User fees were raised sharply in Maharashtra in 1999 and in 2001. The average fee paid per patient in the 136 health facilities doubled between 2000 and 2001, particularly in district and sub-district hospitals with 100 beds.

The overall utilization declined between 2000 and 2001 for outpatient visits and inpatient care in all the four categories of facilities, and the share of the poor in total utilization also fell. Unfortunately, recorded data on the utilization by below poverty line (BPL) families were incomplete and unreliable. Utilization by the poor may have declined for the following reasons: First, revenues from user fees in Maharashtra have largely remained unutilized and, therefore, have not contributed to quality improvements. Underutilization has partly been the result of government orders that have frozen these funds owing to fears of misappropriation. Interestingly, this freeze on fund use has left the collection of user fees unaffected, so that whereas the deterrent effect on utilization of user charges would have remained, it is unlikely that the quality of care increased.

Second, the exemption scheme for the poor may not have worked as envisaged. There is evidence from Punjab (another wealthy state with health reforms initiation with World Bank support) that the process for obtaining exemption cards was time-consuming and bureaucratic, making it virtually impossible for a poor person to obtain the benefits associated with such cards. Without quality improvements and without exemptions, it follows that utilization by the poor must have declined. Another more likely outcome of this is that the poor either shift to self-care, or to lower quality providers.

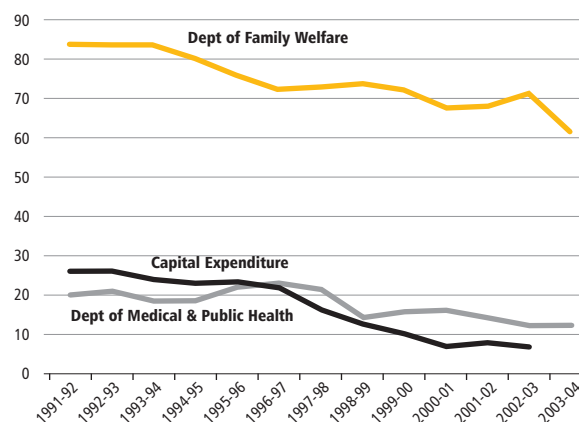
It is apparent that not only is there a potential inefficiency in use of resources but also a geographical inequity in the way user fee revenues are utilized due perhaps to indivisibilities in priority needs-equipment, large maintenance costs-or, the result of dysfunctional hospital committees. More worrying is the persistently low utilization by SC/ST populations during the three financial years, ranging from 3% to 10% of the total inpatient care for gynaecology, paediatrics, general medicine and surgery, with the lower end in the poorer parts of the state and the higher end in the better-off areas. The total population of SC/ST in AP is 22% and in terms of poverty and disease burden account for a higher proportion.

Public health spending by the Centre

Central spending has, over the past decade, displayed four important features: the gradual reduction in the proportion of funds released to states at a time when the states were themselves under fiscal stress; the sharp reduction in capital investment in public hospitals at a time of technological innovation, shifts in the epidemiology and health needs and expectations of the people, besides the sheer increase in disease burden in absolute terms; increased subsidy for own employees; low priority to preventive and promotive health; and inefficiencies in allocations under the National Health Programmes.

Centralization of funds and inadequate capital expenditures

Fortythree per cent of the Ministry's budget is passed on as grants-in-aid to states for implementing various national health programmes. Even though the size of the Central health budget has grown considerably from Rs 1670 crore in 1991-92 to Rs 7851 crore in 2003-04, transfers to states as a proportion of the total budget of the Ministry declined sharply from nearly 57% to 44%. Second is the sharp decline in capital expenditure falling from about 25% to less than 6.7% of the net MoHFW expenditure. During the same period, allocations for materials and supplies for central sector public hospitals also fell from 22% to 15% to accommodate the increase in salaries which increased from 56% to 63% recommended by the Fifth Pay Commission. This had an adverse impact on the declining level of quality in these once premier hospitals that are expected to act as a benchmark in the quality of care (Fig 2.7).

Fig 2.7**Fig. 24. Trends in grant-in-aid allocations by MOHFW to states and declining capital expenditures (Rs in crore)**

Note: 1. Figures in parentheses denote percentage share of central spending and grants-in-aid to states as a percentage of the total MoHFW (GOI) expenditure.

2. Grants-in-aid have been calculated as the sum of expenditure under major heads 3601, 3602 and 3606

Source: Demand for grants, Ministry of Health and Family Welfare, respective years

Increased subsidy for own employees

Six per cent of the combined budget of the Departments of Health and Family Welfare, or 18% of the budget of the Department of Health was spent on 44 lakh beneficiaries or 0.5% of the country's population under the Central Government Health Scheme (CGHS). Since 2000, when over 200 private hospitals were contracted for providing health services and access liberalized, besides permitting beneficiary members to purchase drugs at pharmacy shops-a procedure called local procurement as against the usual practice of bulk procurement-there has been an escalation in expenditures

under this programme from Rs 271.10 crores in 1999-00 to over Rs 503.12 crores in 2003-04, a growth rate of nearly 17% per year.

An analysis of the CGHS payments pertaining to reimbursement of expenses incurred by pensioners, hospitals and diagnostic centers for the years 1999, 2003 and 2004 showed that in expenditures incurred on government and private services the ratio was 1:1.2 which sharply increased to 1:11.7 and 1: 8.5 indicating the impact of widening choice to private sector hospitals, which also increased its share of patient load. (Table 2.21)

Table 2.21

Reimbursements of CGHS Claims 1999-2004

	Govt Institutions (Rs.)	Pvt Institutions (Rs.)	Pvt/Govt Ratio	Pvt as % of total
1999- Individual Claims	733236	914897	1.25	55.5%
2003- Individual Claims	658083	2018361		
2003- Hospital Claims	1156281	16427031		
2003-Diagnostic Provider Claims	0	2900829		
2003 Total Paid	1814364	21346221	11.77	92.2%
2004- Individual Claims	3281255	7277243		
2004- Hospital Claims	1299264	29227474		
2004-Diagnostic Provider Claims	0	2579414		
2004-Total Paid	4580519	39084131	8.53	89.5%

Period selected for the study was June-July for 2003 and 2004, and July to Dec for 1999
Source: MCMH analysis, 2004

Thus, over the 5 year period from 1999 to 2004, there has been a rise in the total number of bills and the total expenditure on professional services. At the same time, even more striking is the growth of payment made to private providers as a proportion of all payments made, as Government providers have claimed just one-tenth of the total payment for provision of professional services in the 2004 sample.

Besides, even the money being spent is not equitable – while Kanpur, Patna or Allahabad have larger number of beneficiaries per dispensary, as compared to that incurred in Delhi or Chennai. Secondly, per dispensary utilization data shows extensive failure due to moral hazard with an average of 14.3 visits per card per year costing the CGHS Rs.222 per visit indicating a substantial inefficiency in resource use. This inefficiency is further reflected in the high outpatient expense under CGHS per card at Rs 3478 during 2003-04, up from Rs.2928 in 2001-2002 and a corresponding inpatient expense for cards issued to retired civil servants and dependants at Rs 6692, per year, up from Rs. 3644 during 2001-02 – a 15% increase in out patient care and a 45% increase for inpatient care during the two year period of 2001-2004. Another important concern is the falling proportion of beneficiary contribution to total expenditure which fell from 20% in 2000 to 12% in 2003-04 and is expected to be 5% in the next five years if the current trend continues.

Low priority to preventive health care

An important public health function that governments are expected to perform is expanding access to public goods by focusing on preventive care and promotive health education. In India, such an interventionist role of the state has been negligible: an omission given the huge treatment costs that will be required to cope with the emerging epidemic of non-communicable diseases.

Under the National Health Programmes, the amount spent on preventive care aimed at behaviour change against the

total public health spending was an estimated 2% (and 6% of the Central budget). A substantial part of these funds was spent on the use of mass media for communicating messages-TV spots, posters, etc. (Table 2.22). In Thailand, an estimated Rs 250 crore was spent only on propagating messages against tobacco use through TV.

With such low allocations, very little was spent on interpersonal communication and public education campaigns for behaviour change ranging from breastfeeding of the newborn, consumption of boiled water or washing the hands with soap, to exercise, diet or non-consumption of tobacco or alcohol.

Expenditures on promoting good health values and public goods, i.e. goods which are non-rival or exclusive, have multiple benefits for households as well as overall economy:

- Increasing labour productivity, lesser absenteeism, improve household incomes and higher savings;
- Increasing retention levels at schools with intergenerational impacts on future earnings and capabilities;
- Savings on curative care and future costs to the government;
- Savings on household expenditures and enabling alternate use on consumption of higher value goods, such as, education, better nutrition, leisure, etc.
- Reduce costs on health expenditures of employees improving the competitive edge.

Centrally sponsored schemes: National health programmes 1991-2003

Of the total combined Central budget, 70% is spent on National Health Programmes (NHPs) related to disease control programmes and family welfare. The allocation of funds for the 5 National Communicable Disease Control Programmes (Leprosy, Malaria, TB, Blindness and HIV/AIDS) went up from 18.6% of the budget during 1991-92 to 26.8% of the budget in 2002-03, accounting for Rs 704.3 crore. Due to limited expansion of the budget, malaria may have got crowded out giving way to HIV/AIDS. During this period, there was a cor-

Table 2.22**Expenditure on preventive and promotive activities under the National Health Programmes (NHPs) during 2001–02 (Rs in crores)**

Activity	Name of Programme						Total	% TE**
	Malaria	Leprosy	TB	FW*	HIV/AIDS	Blindness		
Distribution of IEC materials	8.46	10.9	2.05	85.42	150	9.58	266.41	6
Immunization	0	0	0	547.22		0	547.22	12.4
Supply of condoms	0	0	0	118.21		0	118.21	2.7
Supply of bednets	2.39	0	0	0		0	239	0.1
Supply of insecticides	43	0	0	0		0	43.01	1
Total	53.86	10.9	2.05	750.85	150	9.58	977.25	21.1
Total expenditure	219.78	61.05	100.58	3916.63	225	118.02	4641.06	
% Total expenditure	24.5	17.9	2	19.2	66.7	8.1	21.1	

*Source : Program Officers of Ministry of Health, GOI, 2002–03**Total Expenditure on NHP

responding increase in the HIV/AIDS programme, which registered an increase from 5% to 34.3%. In gross terms, however, the disease control programmes did get a higher allocation as they were all funded under World Bank projects. The quantum of external funding received by the Department of Health on the communicable disease control programmes went up from a negligible amount in 1990–91 to Rs 513.26 crore in 2002–03, constituting almost 20% of the Departments' expenditure during the year (Table 2.23).

Table 2.23**Table 28. External funding of National Health Programmes (2002–2003) (Rs in crore)**

NHPs	Total allocation	Share of external funding	Share of external funding (%)
Malaria	206.6 (29.3)	97.96	47.4
TB	96.8 (13.7)	95.10	98.2
Leprosy	75.0 (10.6)	67.99	90.7
AIDS	241.4 (34.3)	239.96	99.4
Blindness	84.6 (12)	12.25	14.5
Total	704.3 (100)	513.26	72.9

Source: Demand for grants, Ministry of Health and Family Welfare, respective years
Note: Figures in parenthesis are proportion of the total allocated for these 5 programmes.

Another major national programme that is centrally funded in substantial measure is the Family Welfare Programme. Under this programme recurring expenditures of subcenters, reproductive and child health programmes and the free supply and social marketing of contraceptives are the main activities receiving 40%, 20% and 12% of the budget allocations, respectively.

District societies: How effective is the system ?

Financing of disease control programmes (NHPs) are effected through societies created for specific programmes at the state

and district levels. The mechanism for allocating funds directly to district societies was found to be effective as it enabled quicker absorption of funds. However, there has been a measure of scepticism. For instance, it was envisaged that such decentralization of funds to district societies would enable need-based, bottom-up programme planning and budgeting. However, this seldom happened. The purpose of creation of these societies was to provide autonomy for program implementation, decentralize the planning, implementation and monitoring of the programme, and serve as a funding mechanism wherein funds do not lapse at the end of the financial year and can be carried over to the next year.

A study of 17 such societies from five districts, showed that funds often reached the societies late, and sometimes, the last instalment for a year is not even received (and is accounted for as 'Funds in Transit'). At the Central level, release of the first instalment often takes 1–4 months or more to be released, and even more time to finally reach district societies.

Analysis shows that utilization at the society level is not as efficient as expected, resulting in high closing balances at the end of the financial year. To some extent, this closing balance is also necessary, as it allows for a buffer to meet expenditures till the new instalment of funds is received. However, we found huge unutilized balances with some district societies—one had a reserve balance at the end of 2002–03 which is adequate for 5 years of its current annual expenditure, while 5 other societies had reserve balances adequate for more than an year's requirement.

A break-up of the objects of expenditure showed non-uniformity in spending. While societies working on programmes for the control of blindness spent between 41% and over 80% of the total expenditure through NGOs, this was insignificant in the case of other societies. Societies working for control of tuberculosis tended to spend most of the money on hiring contractual staff, and none at all on IEC activities. Further analysis showed that there was no uniformity in focus and the funds were released without any monitoring of work done.

Policy issues

Budget allocation and outcomes

The manner of resource allocation to and planning for the health sector shows a wide disparity in spending and outcomes across states, indicating the absence of appropriate norms for allocation and monitoring of health programmes. Table 29 gives the function-wise budget allocation—primary, secondary and tertiary. Although the Table does not attempt to establish any correlation between such functional spending and key outcomes such as infant mortality rate (IMR) or safe deliveries (good proxies for assessing the functioning of the health system), the data are juxtaposed only to highlight that low-performing states spend relatively higher amounts on primary care as compared to other states. Despite this, they continue to have poor outcomes, raising the questions as to whether there is any correlation between public spending and programme outcomes. For this longitudinal data are needed.

Secondly, the data in Table 2.24, suggest that an equitable spread of resources among all the three sectors—primary, secondary and tertiary—may be necessary. As can be seen in the case of UP, the skewed spending on primary and negligible amount on tertiary sector, which deals with medical colleges and training, can have long-term effects—on the quality of people trained or in creating a shortage of skilled personnel. Whether poorly trained or low in numbers, the impact on access to primary care services will be adverse, as the care provided will ultimately depend on the human resources available.

Financing of national programmes: Allocative inefficiencies

Most programmes are designed at the Centre and funds are released to district societies with strict guidelines and well-defined budget line items, not very different from those laid down for regular health programmes. However in the case of grants to district societies the unspent budgets do not lapse at the end of the fiscal year. The district societies have little flexibility in issues such as contracting selected services or procurement of critical supplies. Analysis also showed that in a number of instances, budget allocations are not need-based and in consonance with the extent of the disease burden. For example, while the disease burden and case-load of leprosy in Bihar was 21.3% of total cases, the State received only 9.4% of the funds, while West Bengal having a caseload of 7.5% got over 10% of the allocation. Likewise, UP and MP together accounted for 37% of the total caseload under child morbidity but received only 24% of the total budget for the RCH Programme. Of the 20 major states, the extent of funds allocated to states such as AP, Bihar, Madhya Pradesh and Maharashtra for the Malaria Programme was substantially larger than the caseload of the disease in these states, while it was the reverse in the case of Karnataka, Orissa and West Bengal (Figs 2.8 and 2.9).

Another important case of misplaced emphasis is the Pulse Polio Initiative, introduced in 1996. Implemented as a vertically driven scheme, an estimated total of Rs 3592 crore has

been spent so far. This amount does not include the extra-budgetary expenditures incurred by WHO on the appointment of over 1000 consultants in India to monitor the programme and the amounts being incurred by UNICEF on IEC. It is estimated that one drop of polio vaccine is almost 30 times more costly than the drop given in routine UIP. Almost 13% of the department's budget during 2003–2004 was spent on this single activity, which has limited impact on reducing the IMR—a principal national and Millenium Development Goal.

Fig 2.8

Malaria Programme: Cases of mismatch in funds and incidence

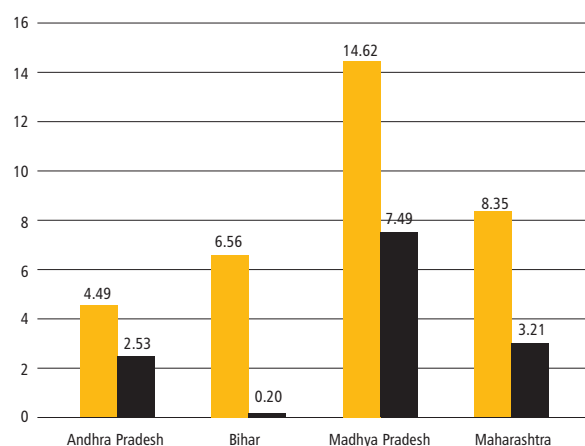
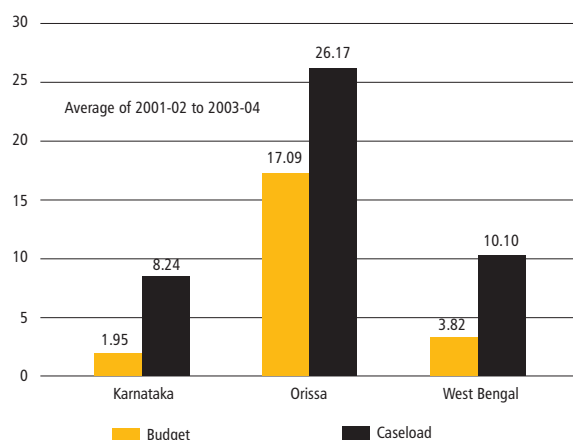


Fig 2.9

Malaria Programme: Cases of mismatch in funds and incidence



Gross underfunding of the national health programmes: A mismatch between policy and practice

An assumption underlying policy governing the NHPs is that services provided are free for all. Theoretically, therefore, regardless of income class, all citizens of the country are eligible for availing services free of cost under the NHP that cover vector-borne dis-

Table 2.24**Sectoral Allocation of Health Expenditure by States: 2001-02**

States	Primary (Lakhs)	Secondary (Lakhs)	Tertiary (Lakhs)	Soc. Health Ins. (lakhs)	Administrative (Lakhs)	Res.& Trg. (Lakhs)	IMR/1000 Live births 2002	% Safe Delivery
Well Performing States								
Andhra Pradesh	63241 (47.53)	22844 (17.17)	27625 (20.76)	5419 (4.07)	11592 (8.71)	2326 (1.75)	62	68
Karnataka	51334 (47.28)	23883 (22)	23626 (21.76)	4719 (4.35)	4164 (3.83)	844 (0.78)	55	62
Kerala	19389 (25.88)	26460 (35.32)	21198 (28.3)	3502 (4.67)	1979 (2.64)	2385 (3.18)	10	97
Tamilnadu	52700 (43.92)	18120 (15.1)	34114 (28.43)	8011 (6.68)	5266 (4.39)	1772 (1.48)	44	80
Medium Performing States								
Punjab	26078 (42.17)	10078 (16.3)	9419 (15.23)	3131 (5.06)	12140 (19.63)	995 (1.61)	51	61
Gujarat	30336 (41.61)	4986 (6.84)	20430 (28.02)	6623 (9.09)	8968 (12.3)	1558 (2.14)	60	60
Haryana	16217 (50.38)	5060 (15.72)	5507 (17.11)	2436 (7.57)	2518 (7.82)	412 (1.28)	62	44
West Bengal	46184 (34.79)	35376 (26.65)	30153 (22.71)	6737 (5.07)	12457 (9.38)	1839 (1.39)	49	43
Maharashtra	102106 (55.7)	27722 (15.12)	36292 (19.8)	11120 (6.07)	4645 (2.53)	1380 (0.75)	45	61
Poor Performing States								
Assam	21002 (58.98)	6003 (16.86)	6109 (17.16)	0 (0)	2182 (6.13)	314 (0.88)	70	20
Bihar	46349 (64.96)	6047 (8.48)	11728 (16.44)	768 (1.08)	4765 (6.68)	1692 (2.37)	61	18
Chhatisgarh	17166 (74.02)	2348 (10.12)	1541 (6.64)	328 (1.41)	1157 (4.99)	394 (1.7)		
Madhya Pradesh	41650 (54.14)	10791 (14.03)	14420 (18.74)	2049 (2.66)	4915 (6.39)	1771 (2.3)	85	32
Orissa	20370 (45.33)	11837 (26.34)	6590 (14.66)	1054 (2.34)	4407 (9.81)	645 (1.43)	87	37
Rajasthan	57831 (58.5)	7556 (7.64)	24598 (24.88)	2275 (2.3)	5159 (5.22)	1419 (1.44)	78	38
Uttar Pradesh	142193 (61.18)	50257 (21.62)	18138 (7.8)	6680 (2.87)	12034 (5.18)	621 (0.27)	80	26
Total	754143 (50.18)	269369 (17.92)	291486 (19.4)	64850 (4.32)	98346 (6.54)	20366 (1.36)	64	
Source: Demand for Grants for Respective States, 2003-04 (2002-03 for Bihar) Note : i) Figures in parantheses are percentage to total ii) RE figures for 2001-02 have been used for Bihar, all others are actuals								

eases, TB, leprosy, family welfare, blindness caused by cataract and HIV/AIDS. Calculations show that the implementation of such a policy would need a minimum of Rs 11,210 crores. However, the total amount spent by the Centre and States on these programmes is an estimated Rs 5563 crores (2001-2002). This gross underfunding not only results in the suboptimal functioning of the delivery system, but also individual households incurring huge out-of-pocket expenditures for services 'guaranteed' to them under the NHP affecting realizations of the goals as envisaged.

Take for example the case of reducing maternal mortality and provisioning of RCH services – a worthy goal as women and children constitute the most vulnerable sections of society. The Centre's total Family Welfare budget during the period 1997-98 to 2003-04, Rs 2,531 crores was spent on activities that have a direct impact on maternal health, accounting for 9.7% of the total budget and Rs 17 per capita per annum for women in the age group of 15-49 years. Due to this underfunding, not only do people incur household expenditures

for these critical services but also resort to health seeking behaviour that may not result in achieving the stated goals. For example, a survey of households conducted by the IIHMR, Jaipur (IIHMR 2000) showed that a married woman in the age group of 15–49 years spent an average of Rs 400 for RCH services (amounting to 10 days wage), with urban households spending Rs 604 and rural households about Rs 292. An estimated amount of Rs 835 was spent for delivery, Rs 440 for treatment of RTI and Rs 60 for child care. The study also showed that the reluctance of women for institutional deliveries and the persistently high proportion of domiciliary deliveries is driven by cost factors: delivery in a public hospital costs an average of Rs 601, private hospital about Rs 3593, while home only Rs 93. The major item of expenditure was also found to be drugs, which constituted 62%. Thus it is clear that if we are to achieve the National Goals of IMR and MMR, there is a need to step up public spending and also develop social health insurance schemes to address the financial barriers that hinder women from seeking good quality care.

Underutilization of funds

Even while there is mounting evidence to justify a quantum jump in public budgets for health, the Central Ministry routinely surrenders budgets allocated to it. Suggestions to increase the budgetary allocation to health are often questioned because of the widely prevalent opinion that the budget allocated is seldom utilized. The reason for the slow pace of expenditure are both systemic and institutional, as well as poor designing and sequencing of expenditure items.

Analysis of the budget allocated and utilized at the end of the year for five states showed a mixed trend (Fig 2.10). Kerala has been underutilizing about 7% of the budget allocated to the health sector, whereas in Tamil Nadu, expenditure exceeded by about 6%. The evidence does not seem to fit a pattern. During periods of high fiscal deficit, percentage uti-

lization should be low, but during 1990–94, UP consistently showed excess spending. While reasons for this will need a closer analysis, intuitively, it could be inferred that at times of fiscal stress, budget allocations are reduced to the bare minimum such as salaries, which get utilized quite automatically. Conversely, the lower utilization of funds at better times could perhaps have more to do with the budgeting process than the State's ability or capacity to absorb, calling for a restructuring of the way in which health is financed.

Lack of stability in budgetary processes

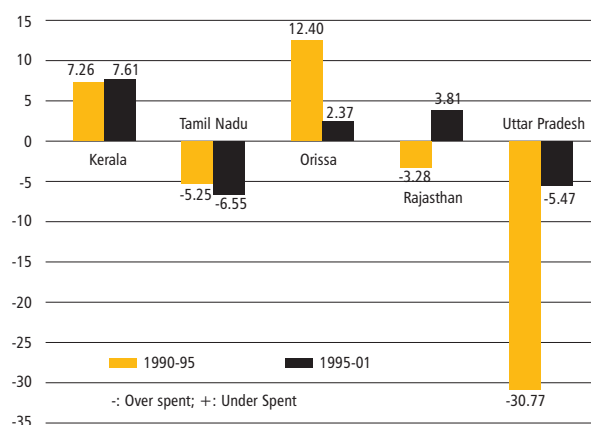
State governments normally pass the budget between April and June every year. Once the budget is passed, district treasuries are intimated of the allocation to various sectors, followed by a budget authorization. The amounts authorized vary widely depending on the financial situation of the state and current priorities, which could be influenced by a range of factors—from political compulsions to debt repayment. Often when the fiscal situation is bad, budget authorizations are released but informally instructions are issued to treasury officers not to release money, disrupting ongoing activities and processes; for example, finalizing a contract for procurement of drugs or equipment. The department does not only lose the 'unused' funds at the end of the fiscal year but is also shown to 'surrender funds' and the next year allocations are made according to the funds 'actually spent'. Secondly, expenditure items are fixed and no discretion is given at any level to reallocate available funds for meeting a need or an emergency. For any such 'deviation', approval of the State Finance Department (and the Central Government in case of a centrally-sponsored scheme) is required, which normally takes a few months. Thirdly, utilization of funds does not take place immediately as the first instalment may be inadequate for any meaningful activity, necessitating the release of subsequent instalments. Fourthly, even after all the process of approvals is obtained for staff to be deployed or equipment to be procured, at time of actual expenditure, the proposal has to go back again to the Finance department which can hold up the file on one plea or the other and cause delays with no necessity to provide any reasons. Finally, in December, the expenditure levels are reviewed and revised estimates for the department fixed. At times of acute fiscal stress, budget cuts are arbitrarily imposed across the department. All these factors are responsible for the lumping of releases, non availability of drugs or other inputs in time for any meaningful utilization, lack of synchronization of the mix of inputs, etc.

Dysfunctional system of financing

Departmental budgets are made in a five-year cycle, categorized into various heads and subheads. The broader divisions are revenue and capital, and plan and non-plan. The budget process so developed over decades has resulted into fragmentation of health sector budget in more than 4000 small heads. The funds allocated under the numerous budget heads

Fig 2.10

Extent of under-utilization of Health Budget (in %)



Source: Reserve Bank of India

Box 2.14

In the Ontario province of Canada, all hospitals are required to furnish detailed financial returns to the department once a quarter based on which budgets are released. The returns run into over 2000 budget lines provided department-wise and indicating not only utilization of the budget but also the utilization of the services. Such concurrent utilization of financial and physical line item-wise is what gives the hospital manager an understanding of what kind of services are growing in demand, where there is an excess of drug budgets or calculate the workload of staff allocated. This then helps them to re-deploy the staff to needy areas by training wherever required; reconfigure resources, shut down departments where there is inadequate demand; bring in control on prescription of drugs or tests wherever they have crossed beyond reasonable limits, etc.

are non-transferable and are surrendered to the State's general pool of funds if they remain unutilized at the end of the fiscal year.

Such systems of budgeting are extremely useful for audit and accounting purposes as the key objective is expenditure control. Such procedures also help insulate the budgets from arbitrary diversions, misuse of funds and deviation from stated objectives. But the system, from the perspective of achieving health system goals, is archaic and needs to be changed. First, fixing budgetary allocation on five-year and annual plan cycles are not based on any meaningful programme audit. There are neither baselines nor endlines, evaluations nor reviews taken into account or made available to serve as the basis for resource allocation. The exercise is routine with incremental shifts and some programmatic targets that move from year to year. In fact, targets have little to do with the professed goals that in turn have little to do with financial allocations. Therefore, since the physical targets have no bearing with the financial allocation, focus shifts to budget utilization to protect future allocations. Since financial expenditure is the key indicator for achievement, the major proportion of the cumulative energy of the department goes towards obtaining 'utilization certificates' and releasing funds to states and district societies, rather than focusing on the promotional activities and impact on health outcomes. Secondly, health sector needs are different requiring a measure of flexibility as, barring some broad heads of expenditure where advance planning can be done, under operational costs, the level of unpredictability could be high. The type, nature and intensity of diseases change with seasonal variations, demographic shifts and the macroeconomic environment. The health managers cannot therefore be tied down to a five-year plan of activities nor can they foresee their needs five years in advance, as a SARS epidemic can upset the whole budget allocation and priorities. Similarly at the local level, hospital managers have to take multiple decisions all the time, requiring flexibility and some autonomy in financial decision-making.

Besides, for a policy-maker, the structure of budgeting makes it impossible to identify the cost centres, where expenditure control needs to be exercised, the type of skill-mix needed, the departments that should be closed down and those that

need to be expanded in keeping with shifting demand etc. Such lack of flexibility is the reason for the low occupancy of beds in public facilities. Since hospital budgets are not global and are factored based on bed strength, which determines the staff and drug support etc., there could be situations where one department has funds though few patients, while another may have restricted funding but have two patients on one bed.

Complex design

Funds also do not get spent if the design of the scheme or intervention is very complex and process oriented. Participatory systems that involve all the stakeholders provide, in the long run, greater sustainability to the programme. But such approaches are time intensive, as different constituents of stakeholders have different and varied ideas, expectations and needs. Harmonizing them takes time, as community responses are not always uniform. Therefore, when any activity has to be implemented within a strict timeframe, then such processes get short-circuited and data are fudged or money not spent. Secondly, and this is more in donor-funded projects, the emphasis is on spending. The release of funds is in equated instalments spread over all the project components. In such a system, delay in the completion of one activity upsets the implementation of others. For example, training may get held up due to delays in the preparation of the training modules or training of trainers, or the procurement of equipment may get stalled due to delay in the construction activity.

Budgeting not functional

In other countries, the budgets have two heads—capital and operational. The budgeting system in India is based on the artificial classification of plan and non-plan. This makes it impossible to track fund flows. Since the annual planning process only considers the plan or 'new' activities, the maintenance of assets never gets the required attention under the non-plan budget. So while under plan, buildings are constructed, cost of maintenance is not factored year to year. Secondly, the aggregation of budget heads keeps changing making any trend analysis difficult. Thirdly, there is no uniformity in budget lines in the country. For example, in Karnataka and Maharashtra, the Director of Health Services is aware of and responsible only for budgets released to hospitals having more than 100 beds, whereas budgets related to facilities having less than 100 beds are administered and monitored by the respective Zila Parishads with funds released by the Department of Finance. Moreover, the budget lines are only useful for accounting purposes and not for policy planning. We tried, for example, to calculate how much government departments are spending on health care of its serving employees. For Government of India, this information is spread over 8000 Drawing Officers, 700 autonomous bodies, 38 departments and 220 PSUs. Each DDO again had to scrutinize the salary bills to disaggregate the amount spent on medical care! Obtaining this information from state Governments was impossible.

Weak financial capability

At almost every level—central, state or district, administrative directorates or hospital units—the staff dedicated for financial oversight functions are few and their capacity weak. In most cases, the staff consists of one or two officers and a few clerks. None are trained on either financial management or on health needs. Often, their knowledge of financial rules is superficial. Compare this to Sri Lanka where the DG's office alone has nearly 4–5 officers, equivalent to the IAS officers in India, for health accounts. While Central Government has an internal audit system, at the state and district levels, such concurrent audit systems do not exist. Weak systems give room for discretion and scope for fraud and more importantly for delays largely due to raising meaningless and frivolous queries. This therefore calls for greater professionalization of the finance set up and also sharing of responsibility, making them equally accountable for poor expenditure. Changing mindsets from account-keeping to being facilitators for achieving certain goals should be the key for the future.

Mobilization of resources

An important and critical function of good governance is to mobilize adequate resources and monitor their judicious use. Financial mismanagement can be a major bottleneck in translating policy into action. Irregular releases due to poor monitoring, inadequate release due to lack of data on actual requirements, excessive releases and inefficiency in monitoring utilization and ensuring probity can also create distortions and unintended consequences. To a large extent, non-utilization of funds by departments is due to poor monitoring and follow up—an administrative failure rather than the system's inability to absorb the funds. Besides, resource planning needs to be linked to programme needs. Often, this does not happen for want of data.

To improve efficiency in spending as well as to mobilize resources, several state governments have been providing a measure of financial autonomy to hospital units by giving them the freedom to collect and retain user fees. To ensure appropriate use of these resources, hospital committees with representatives from the public have been constituted. The overall experience has been good as it has generated greater accountability and also given health facilities access to resources required to improve their facilities. However, this is inadequate and limited; the real test lies in giving them full operational autonomy to compete with the private sector.

Inadequate allocation of funds under externally funded projects

A frequently heard issue in relation to externally funded projects is the slow pace of expenditure. This happens on account of three reasons: Firstly, while government approves several stand-alone projects and agrees to the yearly funding plan, in practice, funds made available under the 'EAP' component are normally short of the amounts agreed to.

This is because of the system of capping the proportion of the EAP for each ministry based on the total resource position of the country, calculated on the basis of total domestic and external revenues.

Secondly, the procedures for implementing activities are cumbersome and require multiple clearances at several stages. Construction activities and procurement of equipment take on an average eighteen months to two years for starting the activity/or obtaining the equipment. Similarly, recruitment of staff, takes over a year due to complex procedures and time-consuming selection processes. States are also often reluctant to the creation of the posts for which they will have to pay after the cessation of the project in five years adding to their non-plan budget. Besides, due to low salaries, most of the time posts do not even get filled up. To circumvent this problem, increasingly projects are recruiting persons on contract. While this enables quicker placement of people, it affects the long run human resource development and management of the department, since contractual appointees are neither provided training nor given any financial delegation of powers and responsibilities as they are seen as temporary work hands.

Thirdly, external funding is not provided as an additionality. In such a system, instead of the health system being strengthened by external funding, priorities get skewed and distortions created as the non-funded programmes, though important, get lower funding priority. Besides, since external funding is not an additionality, there is little incentive for the department to mobilize donor aid. Sometimes, in times of acute fiscal stress, two things happen: either the externally-aided components of the budget are protected to the exclusion of all else, as seen in Andhra Pradesh during late 1990s, distorting once again departmental priorities, or the crises results in curtailing availability of funds to the externally-aided projects also, affecting current spending and future ability of the state for raising funds.

Summing up

It is clear that there is gross inadequacy of public finance in the health sector and an immediate and significant scaling-up of resources is an imperative. The undue burden on households spending on health cannot be wished away. Further, it is also clear that there is an urgent need to restructure the budgeting system to make it more functional, amenable to review resource-use for taking corrective measures in time and flexible enough to give the capacity to respond to an emergency or local need. Rules and procedures for actual release of funds, appointment of persons, labour laws, procurement systems, all need a thorough review. A greater decentralization of funds, aligned with functional needs and responsibilities is necessary. But any decentralization and financial delegation needs to be carefully calibrated and sequenced. In other words, decentralization should be done after developing the requisite financial capability and laying down of rules and procedures for accounting systems. Unless such restructuring takes place of the financing and budgeting systems, greater absorption of funds will continue to be difficult.

SECTION III

**Building a health system
for improving health in
India: The way forward**



Building a health system for improving health in India: The Way Forward

Improving health in India will require the building up of the health system in the next ten to fifteen years based on certain core values. Five concerns emerge when facing the challenge of improving health in India: (i) promoting equity by reducing household expenditure in total health spending and experimenting with alternate models of health financing; (ii) strengthening public health infrastructure and restructuring the existing primary health care system to make it more accountable; (iii) reducing disease burden and the level of covariate risk; (iv) establishing institutional frameworks for improved quality of governance of health; and (v) investing in technology and human resources for a more professional and skilled workforce and better monitoring. These concerns need to be resolutely addressed by a combination of policies that will stimulate the process of reform to achieve the goal of good health and well-being of all citizens. Such reform, which will take no less than fifteen years, should aim to overhaul the existing system that is dominated by low-quality health care, is costly and unaffordable for the majority of the people, and where the public sector is underfunded, poorly equipped and constrained by bureaucratic procedures. If India is to stay committed to achieving the Millenium Development Goals in 2015 and the National Health and Population Policies in 2010, this Commission recommends that public spending be increased from the current level of 1.3% - 3% of GDP within the next ten years. These additional resources can form the building blocks for implementing the Commission's recommendations for a strong and viable health care system in India.

Building on values

The Commission believes that for the effective functioning of the health system in India, it is necessary to de-medicalize, democratize and decentralize health care delivery by having a wider group of people to share the powers, responsibilities, functions and a part of the financial burden. Such restructuring of the existing delivery system, public and private, would need to be based on a universally accepted set of core values, such as compassion, concern for the strict adherence to ethical norms and an unflinching commitment to patients' well being, and the following guiding principles:

- Accountable to the health and well-being of the community it serves;
- Responsible to the patient who receives treatment and care in dignity, fairness, without discrimination and in consonance with the basic tenets of a patients charter;
- Accessible at all times and at all facilities — that is, none being denied care on grounds of time, distance or place of residence;
- Adaptable to ensure that local practices, traditions and preferences are given due consideration;
- Participatory — providing leadership in bringing about behaviour change for adoption of healthy lifestyles and practices that promote well-being and good health values; and
- Recognizing the special value of mothers, children and senior citizens in society.

To implement the principles enunciated above, two initiatives to improve efficiency and accountability in the health system need to be taken :

- a) Gradually shift the role of the state from being a provider to a purchaser of care for the patients, as per their choice. This calls for instituting different financing mechanisms that will help contain costs, provide financial risk protection for the poor while

- also ensuring equitable access to good quality care, and trigger a competitive environment in secondary and tertiary markets, in particular, to improve efficiency ; and
- b) Ensure that the three tiers of the primary health system are embedded within the community by establishing appropriate institutional structures for enhancing accountability.

I. Reducing household expenditures of the poor: Options for financing comprehensive health care

The unpredictability of illness, the lumpiness of health consumption, and the irregular and seasonal nature of incomes make it virtually impossible for the poor to finance their health needs, resulting in a denial of care and greater poverty. It is unacceptable that poor households spend substantial amounts on services that ought to be freely available under the National Health Programmes. Second, while preventive health care leads to improved health of the population over time, in the short term, access to curative services is essential for limiting the associated income shocks and preventing progression into poverty on account of unexpected hospitalization or prolonged illness. In other words, the poor can be expected to comply with low-cost preventive behaviour (washing hands with soap/using a bed net) as it is within their realm of control but cannot afford the hospitalization in times of emergency, and losing their lives in the process. This then shifts the burden of responsibility to the society for providing treatment to those who have no means.

People's health needs are diverse. Earaches, body pains, psychosomatic afflictions, epilepsy, snake-bites, problems associated with postnatal care or osteoporosis are needs that the health system must address. The inability of the system to provide treatment for such ailments force individuals to seek private care, that is expensive and often of dubious quality. To ensure access to a standardized schedule of benefits we recommend a shift in the provision of services from the current concept of individual vertical programmes to a comprehensive package of services consisting of three components:

- (i) a core package to be universally made accessible at public cost and consisting of public goods; viz, all vector-borne diseases, TB, leprosy, HIV/AIDS (excluding treatment) and other sexually transmitted diseases, childhood diseases, preventive and promotive health education that includes immunization against vaccine-preventable diseases, antenatal and postnatal care of mothers, family planning and information dissemination on all vital health matters, nutrition, water, sanitation and female literacy.
- (ii) a basic package consisting, in addition to the above, surgery and treatment for hypertension, diabetes, respiratory diseases such as asthma and injury;
- (iii) a secondary care package consisting of treatment for vascular diseases, cancer and mental illness in addition to referrals from the CHC that need to be handled at district hospitals.

Based on minimum treatment protocols covering human resources, equipment, drugs and infrastructure, unit costs were

calculated. The numbers help place a monetary value to services being provided and enable quantifying the outer boundaries of health markets. Our calculations show that an estimated Rs 1160 per capita per year at current prices would be required to provide the comprehensive package of services: (i) Rs 150 per capita for the core package; (ii) Rs 310 per capita for the basic package; and (iii) Rs 700 per capita for the secondary care package. Annexure I to III give the costing of these three packages. Annexure IV gives the methodology.

It is significant that the estimate of Rs. 1160 for the comprehensive package of services that would address over 95% of people's needs is almost equivalent to the amount of household expenditures being incurred now, estimated to be Rs 1012 per capita in 2004-05 current market prices. In redesigning the instruments of financing, the burden is shared more equitably between government, local bodies / communities, individual families and insurers.

Schedule of benefits

(i) Core package

Table 3.1 shows that during 2001-2002 (FE), the Centre and States put together funded about half the amounts actually required for ensuring universal access to National Health Programmes, which are a central component of the core package. Public funding for these programmes therefore has to be increased on priority.

Achieving national health goals: A collective endeavour

It is envisaged that the core package be mandatorily stipulated for all health facilities, public or private, as a condition for getting any recognition, license or grant. This will help heighten awareness of the National Health Goals and instil a sense of social responsibility. The facilities can be provided a choice regarding the manner in which they wish to participate. Therefore, every facility does not have to set up its own facilities to treat these diseases/conditions. But it does imply that if every one of the 500,000 private facilities were to talk the same language, the messages would certainly reach the intended. The treatment protocols should be discussed, negotiated with all provider associations and public health authorities, and then be enforced by law, as should reporting of all notified diseases/conditions. Enforcing this discipline should become a core task of the Ministry of Health at the Central and State levels. In other words, the message should go out clearly that the National Health Goals that have been eluding us for the past quarter of a century must be achieved within the time-frame specified in our national policies, and that the responsibility of doing so has to be collectively shared by all.

User fees for certain services within the core package?

Some services included in the National Health Programmes do not entail any externalities and thus do not strictly qual-

Table 3.1**Underfunding of National Health Programmes - Rs/Crores / 2001-2002**

S. No.	Programme	Estimated Caseload in any given year/ lakhs	Budget required	Actual releases		Deficit	Remarks
				Government of India	State Governments		
1	Vector Borne Diseases	24	529	220	521	Nil	Includes cost of treatment & spray operations
2	TB	85	687	101	156	430	Includes cost of treatment
3	Leprosy	6.1	41	65	203	Nil	Includes cost of treatment
4	RCH – FW	263 infants 290 pregnant mothers	8567	4095	205	4267	Includes cost of treatment. As figures on funding not available – taken as 5% of Gol spending (for spending by states on costs not funded by Gol)
5	Blindness	67	700	109	21	570	Includes cost of treatment
6	HIV/AIDS	45 persons in reproductive age group	452	155	1	296	Includes cost for preventive activities @ Rs. 10/person in the reproductive age group assumed for estimating minimum need.
TOTAL			11,210	4,745	902	5563	

ify for public subsidy. For example, there appears to be no justification for providing free or subsidized cataract surgeries or deliveries of women who can afford to pay. Therefore, it is recommended that free care be provided for those—not exceeding 50% of the households— who fulfil an income criteria on self-certification and/or certified by the communities / peoples management committees / or local bodies.

(ii) Basic package

Together with services included in the Core Package and the Basic Package will cover nearly 85– 90% of the health needs of the people and, if implemented well, will substantially reduce both household spending and also disease burden. As these are minimum services that should be made accessible to all citizens, this should form the basis for public funding of primary health care at all the constituent units of primary care – the CHC, PHC and Subcentres.

(iii) Package for secondary care

This package covers treatment of diseases/conditions that require higher levels of care and are estimated to account for about 5 to 10% of total number of ill. The neglect in addressing these diseases/conditions based on the assumption that they are lifestyle diseases suffered by persons who can afford the treatment costs is no longer true. As a first step, a comprehensive public policy should be formulated listing the legal, educational and promotive actions that must be taken to reduce the disease burden on account of non-communicable diseases, injuries and accidents. As a second immediate step, public funding needs to be stepped up for upgrading and strengthening subdistrict and district-level hospitals so that they can provide quality care on par with that available in the private sector. Such investment is justified on two grounds : 1) that given the inelasticities of these markets,

impoverishment due to medical costs takes place at this level; and 2) Utilization surveys show that two thirds of the poor who availed of hospital services depended on public facilities which at the point of service are cheaper by one third as compared to the private sector.

What are the implications?

If it were to be assumed that the Government is the sole provider of the comprehensive package of services consisting of preventive, promotive and curative services, both primary and secondary, the country will require over Rs 1 lakh crore @ Rs 1160 per capita per year, necessitating a five-fold increase in the budget. Further, if it is assumed that these services are to be delivered only through public facilities then additional capital investment for beds, attendant infrastructure and appointment of the large number of specialists by atleast three times more, to cope with the increased patient load, would be required. Since such a quantum of funds is clearly unavailable with the Government, resource limitations leave us with two options: (i) targeting the poor only for publicly funded care; and/or(ii) considering alternate models of health financing that facilitate cost sharing by households.

(i) Option I: Better targeting

The concept of targeting public funding for the poor is not new but has been difficult to implement. Experience from working with the public distribution system of essential commodities or poverty alleviation programmes has demonstrated the complexities in targeting the poor and the amount of misuse and corruption it generates. In health, the situation is worsened by the moral obligations that are implicit in any policy that denies care on extraneous grounds of age, income, residence or social affiliation. Besides, due to restricted public funding, there is already a system of targeting or

informal rationing as witnessed in the long queues, non-availability of drugs or diagnostic services, gruff treatment, etc. In this system, it is the poor who are left out.

User fees as a financial instrument are being increasingly used as a means of mobilizing resources to improve the quality of care and cope with the increasing patient load. The Commission's findings suggest that user fees tend to deny care to the non-paying ones. Second, user fees that substitute for public funding carry an implicit message—paying patients get better attention than those who do not. For these reasons, the Commission does not recommend the current policy adopted by several States to impose user fees in public hospitals without being appropriately linked to systems and mechanisms that provide financial risk protection and guaranteed coverage of the poor.

(ii) Option II: Alternate models of financing

Centralized planning of health services tend to focus on supply of inputs rather than utilization. Rule and procedure bound, public systems have insufficient motivation to innovate or ability to quickly respond to emerging demand. Besides, inadequate and unstable funding has also reduced the capacity to effectively deliver services of the nature that are valued by people. On the other hand markets do respond to individual demands and in a multiplayer environment competitive pressures do force a certain level of efficiencies and innovation. But then markets function on certain assumptions such as perfect information, free entry and exit, a fair distribution of income with all having an ability to pay etc. The health sector are characterized by a wide range of market failures — high element of risk and uncertainty; moral hazard, adverse selection, externalities, asymmetrical distribution of information making the sovereignty of the consumer notional; several barriers to entry such as licensing and prices etc. It is for these reasons that even in market economies government intervention has been found to be unavoidable. Be it US or Singapore, a basic safety net is provided to shelter vulnerable populations from impoverishment due to catastrophic care. In the absence of such intervention not being effective, households spend substantial amounts on health care, paying whatever is demanded as individuals do not bring with them market power. That requires pooling of risk based on the concept of solidarity.

The health markets in India are competitive and in the unregulated, fee for service payment system, providers are able to maximize profits by increasing volume, use of high cost technology and intensive resource use, increasing the overall cost of care, necessitating designing of alternative systems of financing health care that would have incentives to contain cost.

For the reasons stated above, the Commission recommends that India consider alternative financing systems that will encourage more accountability, sustainability, better efficiency and reduced cost. Four models that merit serious consideration are: (i) community-based health insurance; (ii) capitation; (iii) vouchers; and (iv) social health insurance. These alternative financing models need to be pilot-tested, under expert advice, in a few districts, and refined before wider appli-

cation. Since these are new concepts in the health discourse in India, broad contours of the issues involved under these four financing models are described below:

(i) Community-based health insurance for the core package

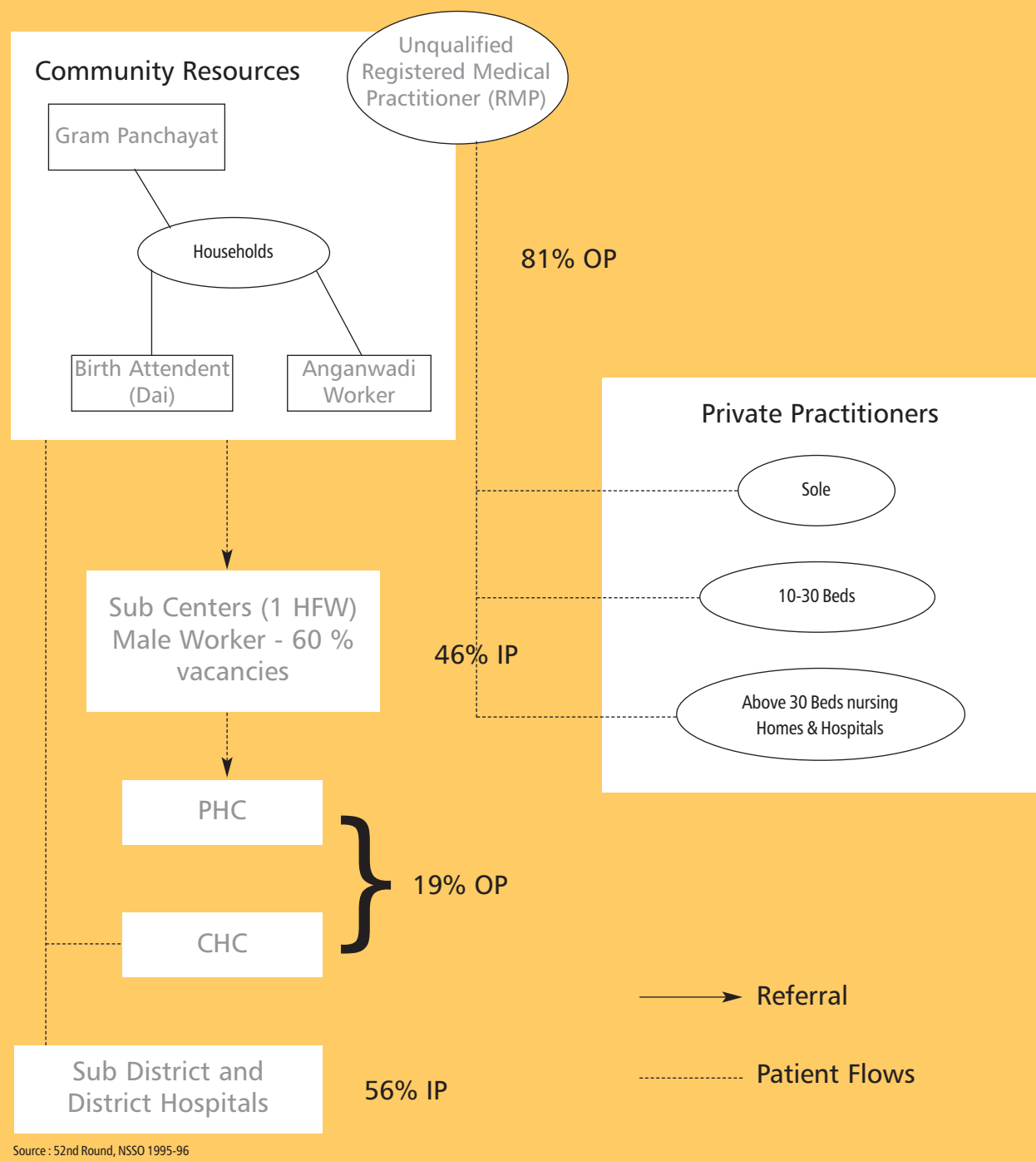
The Community-Based Health Insurance Model rests on the hypothesis that community members' willingness to pay is influenced by the level of social cohesion and the extent to which members envision that expected benefits will exceed the value of the amount they have to pay as premium. In other words, community-based health insurance schemes are based on the principle of solidarity. Typically, in such models, the community manages the fixing and collection of premiums, content of the benefit package, criteria for copayment and exemptions and, finally, the choice of provider(s).

(i) The concept of a Village Health Unit (VHU): First contact care (FCC)— choice level 1

Subcentres and PHCs have acquired an iconic status in the country's debate on health care service delivery, despite evidence showing that the community routinely bypasses these facilities, underscoring the need to provide communities choice of providers. For example, the community may well consider other options to the Subcentre for obtaining preventive and curative services for minor ailments within their village. They could contract a Village Health Unit (VHU) consisting of the rural medical practitioners (RMP), traditional / trained birth attendant (TBA) and the village health worker (VHW) to discharge a range of functions listed in the protocol developed by a competent authority. Payment systems to the Health Unit could be negotiated by the community, consisting of multiple options such as a base salary to unit members, performance-linked remuneration, and / or commissions on sale of drugs provided by the Government depot, etc. The Unit will work under the technical supervision of the PHC, which will have the responsibility of close supervision and monitoring and also ensure training at periodic intervals.

Such a system will enable communities to have trained providers within their village itself. As the expenditures to be incurred on the VHU towards remuneration, drug kit, training and supervision, etc. will have to be met out of the budget for the Subcentre, local authorities in consultation with the community will need to choose between the VHU and the Subcentre model. This model has several advantages: it is likely to be more sustainable, accountable and more cost-effective with potential for substantial savings — a principal concern for restricted public budgets — and above all provide community control over the most basic of needs. (see Annexure V). In China where such village based provider system has been tried out, results show that more than 80% of ailments are treated within the village and referrals to the county hospitals (like our CHC) have fallen to less than 9% .

Fig. 3.1 shows the current system of health-seeking behav-

Fig 3.1**Current System of Health Seeking Behaviour at Community Level**

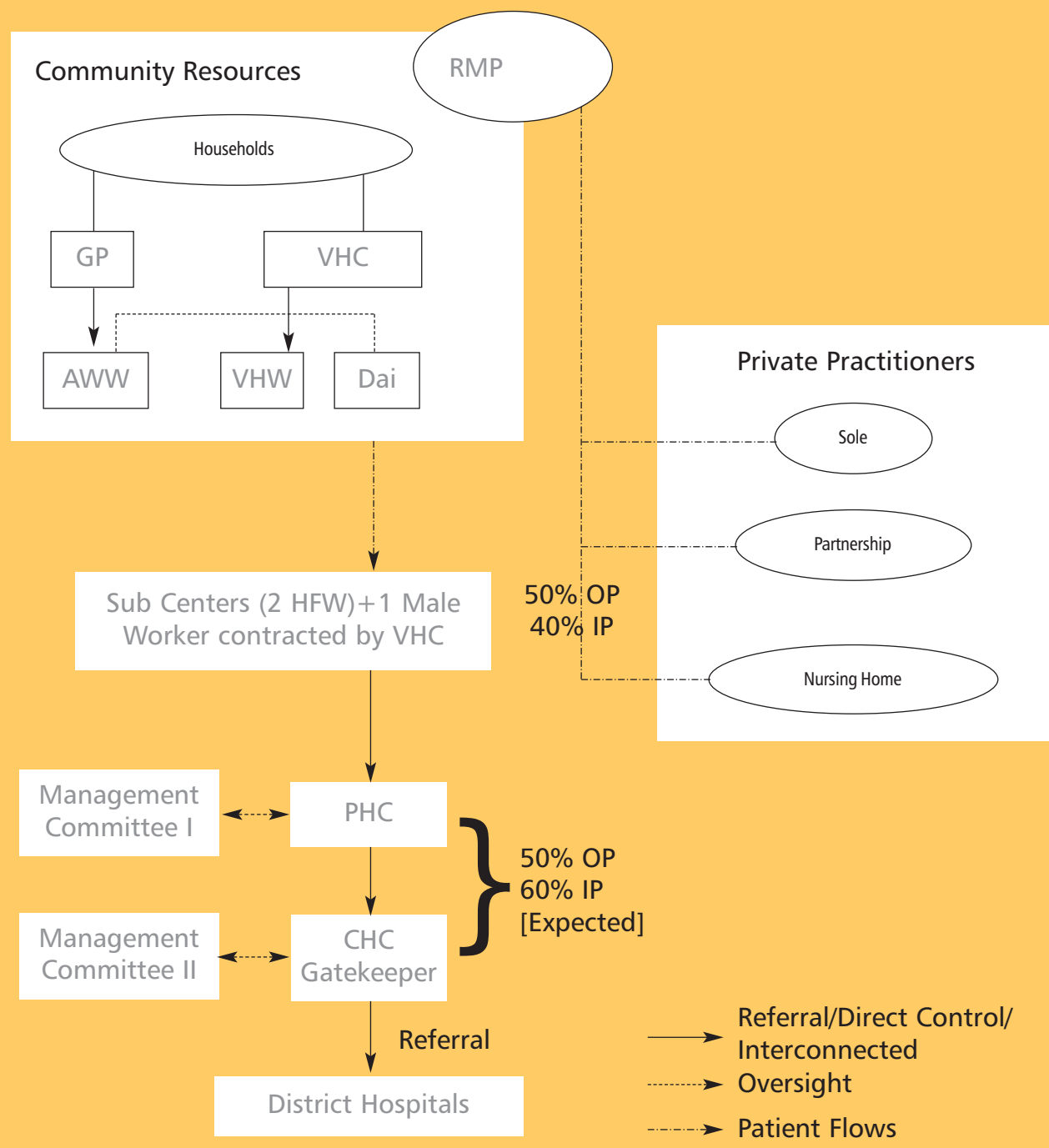
our at the community level, Figs 3.2 and 3.3 provide two options for implementation of the core package of EHI with community participation.

Professional bodies in India are reluctant to interact with the RMP and current legislation makes it incumbent to ban them. Evidence, however, suggests that RMPs enjoy social consent as they are the main providers of a large part of the health care in villages due to the virtual collapse of the pri-

mary health system. This has made enforcement of any legislation virtually impossible. In the light of this experience, it is recommended that RMPs be put through stringent selection criteria and receive suitable training to achieve minimum levels of proficiency and thereafter be authorized to practise. Once this is put in place, the law banning practice by untrained and non-authorized persons should and can be enforced. In States such as Bihar, UP and backward areas in other States,

Fig 3.2

Option I - Implementation of Core Package of EHI with Community Participation

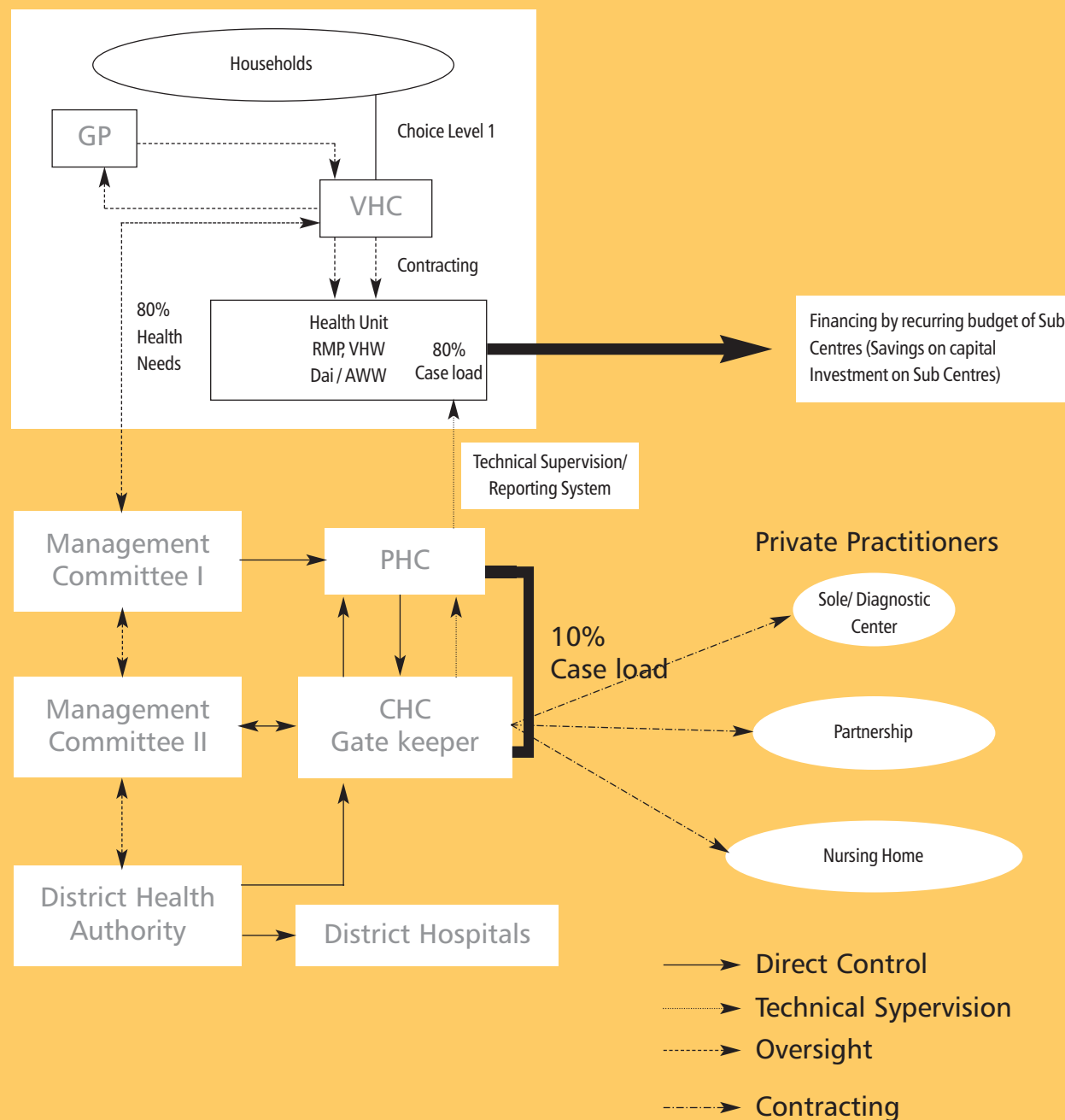


such an approach will be the only option for providing credible services to the poor. In Bihar it is reported that over 75% of RMPs are graduates, many with BSc degrees—a far higher qualification than that of ANMs.

(ii) Use of vouchers: Choice level II

Another innovative way of subsidizing the poor, while at the same time ensuring that they get quality care, is by the

use of vouchers. Vouchers are non-cash instruments for buying services. They have been found to be particularly effective, in Indonesia and Latin American countries, in buying specific services that have cost-effective solutions. For example, in the case of deliveries and cataract, conditions that are specific, not an emergency and also verifiable, Village Health Committees / local bodies / Self Help Groups etc., can be asked to distribute the vouchers to the pregnant women or the persons suffering from cataract.

Fig 3.3**Option II - Implementation of Core Package of EHI with Community taking Responsibilities**

The persons then have the choice of going to any accredited provider of their choice and avail of the service. In this system, the provider redeems his claims from the financing agency. For the success of this system of financing, which has the potential of being misused at the distribution level, effective monitoring will need to be ensured and the accredited provider institutions contracted to supply the services

at pre negotiated rates. In other words, the provider cannot be permitted to take any additional money from the patients. Such a system of payment can be extended to other specific conditions/diseases as more experience is gained and provider responses and other system issues studied. It would therefore be worthwhile to implement this option on a pilot basis.

(iii) Capitation-based payments for basic package — choice level III

Capitation-based financing may be defined as providing a fixed per capita amount for a member enrolled with a provider in lieu of assuring the member access to all services as listed under the schedule of benefits. The implication of this on the one hand is that the provider bears the entire risk and therefore has no incentive to over treat or overmedicate anyone. On the other hand, it implies that people will be willing to enrol with the provider only if they perceive to be getting good treatment.

In practical terms, such a system will require the public facility CHC to enrol members and seek funding support from the district authorities. Such a procedure has the potential of being effective in not only making the provider institution more accountable to the patients but also for measuring patient satisfaction. The design will consist of the CHC being provided its budget on a capitation basis but its success will depend on effective monitoring to ensure achievement of performance targets, as well as no tendency to under treat patients, particularly the poor. This should be an essential pre-requisite in the designing of health care systems for, in India, the problem is not excessive consumption of health services but an accumulated deficit that needs to be addressed. Further, the design features will also require delegating authority and providing managerial and financial autonomy.

The capitation system has the advantage of capping expenditure and shifting responsibility to the provider/facility. In other words, if additional funds are required the hospital management committees / local bodies / hospital authorities will need to mobilize the resources. Savings, if any, can be utilized for improving the facility or for other health-related activities. The system also provides flexibility to enter into contracts with other providers—public, NGO or private—and

develop provider networks.

Capitation systems of financing are simple, straightforward and place full responsibility on CHC/providers. However, as a model, the capitation system requires high quality and rigorous monitoring. Since this is a new form of financing and the public health administrative system does not have the requisite capacity to regulate, enforce and monitor contracts, the Commission recommends that in a few districts this model be pilot tested adopting different phases as depicted in Fig. 3.4 and 3.5 (Phases I to IV) in different areas to assess the suitability and feasibility of adopting the model throughout the country as is the case in UK or Thailand.

(iv) Social health insurance for secondary care package — choice level IV

The schedule of benefits drawn up to cover essential health interventions as identified as relevant to the poor and to be provided at the secondary level of care covering 70% of the population, requires an estimated Rs 62,900 crore, at government prices (2004-05). This is a substantial amount, well beyond the Government's ability to provide in the current economic environment. Of the policy options available, Option IV seems the most feasible for India to pursue (Table 3.2).

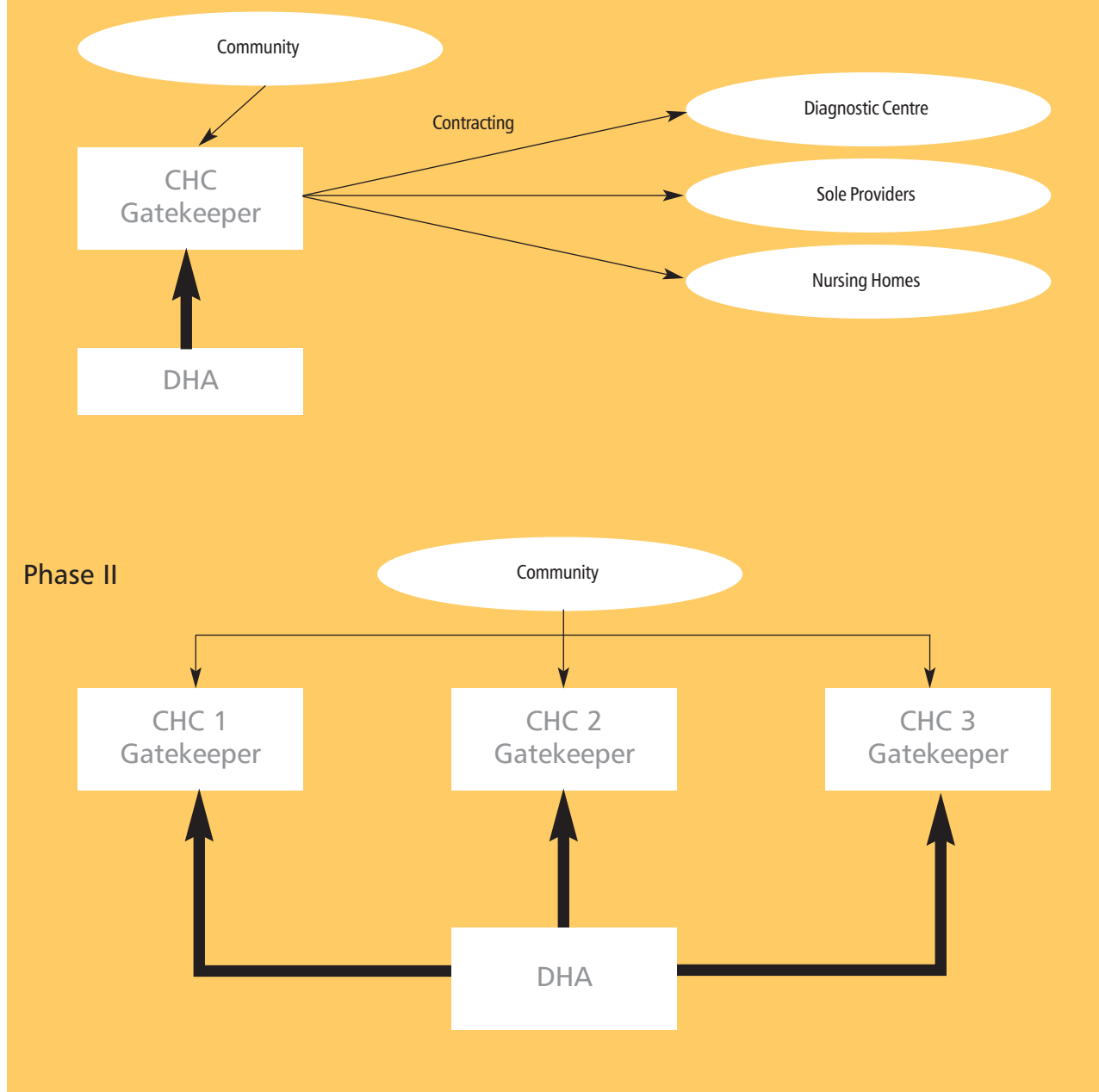
Insurance at one level promotes equity as it empowers an individual in need of health care to access a comparable quality of care irrespective of economic status. At another level, insurance also functions on the principle of cross-subsidization where the rich, healthy and the young subsidize the sick, old and the poor. Therefore, for assuring equitable access to secondary care and reducing the financial burden on households, social health insurance is recommended as a way forward.

Social insurance implies insuring persons against a definite risk and has a broader social objective than self-interest. Exercising this option will require laying down certain basic conditions: (i) having a gatekeeper like the CHC and a strong referral

Table 3.2

Options and Implications of Financing Systems

Options	Implications	
Option I	User fees with exemption for the poor. At present, the Government spends Rs 2859 crore on secondary care. User fees account for barely 2%–3% of the total.	The poor may get left out or impoverished/indebted when they access it. The risk is borne entirely by households.
Option II	Full coverage through Government taxes	Not affordable for the Government. The risk is borne by the Government.
Option III	Private Health Insurance for the rich, Government provisioning for (APL) uninsured (BPL)	90% risk will be on the Government. Penetration of the private sector will be restricted to less than 10%. At present, it is barely 1%. Unaffordable for the Government. Even if insurance is made mandatory, private insurance is not considered a reliable vehicle as it is known to discard all high risks.
Option IV	Health Insurance—Private and Social Health Insurance	Will require a catalyst with a large risk pool for Social Health Insurance/ cross-subsidizing the poor as private insurance will cover only the top creamy layer of 10%. The risk in this model will be shared by the insurers, providers and households.

Fig 3.4**Phase I Contracting private providers under capitation system of financing**

system, penalizing deviation by levying full user charges for services consumed; (ii) accreditation of private hospitals; (iii) regulations covering health insurance products to cover a minimum set of services provided in the secondary care package, in accordance with the treatment protocols, at rates predetermined/negotiated by the Government and inclusion of preventive and promotive care; (iv) community-rated through income-related premiums and not allowing any exclusion of existing diseases; and (v) mandatory insurance—a goal that is to be achieved over

the next 10–15 years in a phased manner. Mandatory insurance is the only way of obtaining the desired size of the risk pool required for keeping premiums low and making them affordable for the poor who are the main target group.

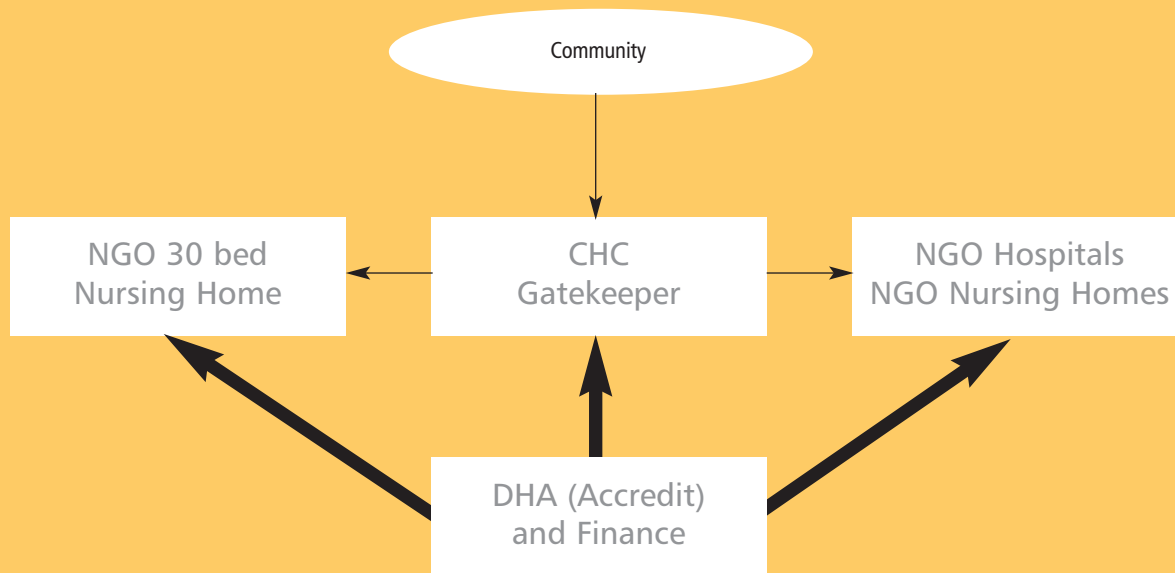
Risk pools

Risk pools could be multiple. For purposes of viability a community based health insurance model may require 10,000–

Fig 3.5

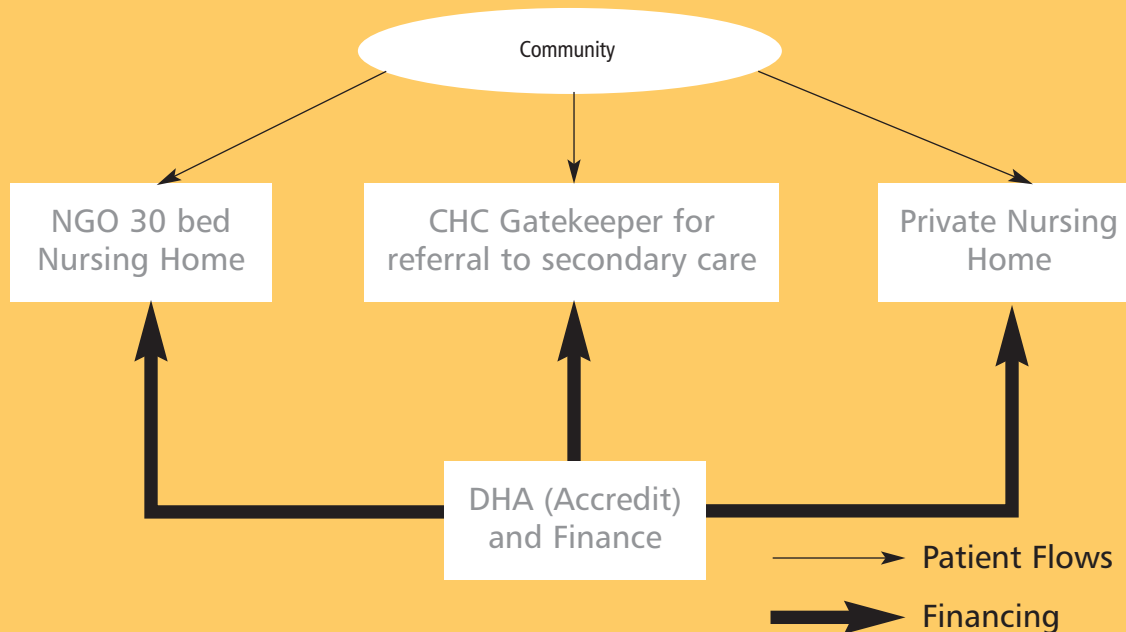
Phase III

Advanced I - as Regulatory systems & monitoring capacity get established- contracting NGO, Trust Hospitals



Phase IV

Advanced II - as Regulatory systems & monitoring capacity get established- contracting private and NGO Trust Hospitals



15,000 members. As can be seen from the Table 3.3 if health insurance were to be made mandatory, about 30% of the workforce can be covered. For the rest, at the district level, risk pools could be constituted around professional or occupational groups like Self Help or Micro-Credit Groups, weavers, fishermen, farmers, and agricultural labourers and other informal groups not covered under any cooperative network constituted into societies, federations or cooperatives and given management control. In Kozhikode (Kerala) it is observed that almost 90% of the population is covered under some form of network or the other. Such groups can then be provided credit to pay the premium and the amount recovered in monthly instalments. For middle classes who are not organized, low cost insurance can be made available also through Hospital Maintenance Organizations (HMO's). Hospitals with 500 beds or more can be permitted to organize themselves into Health Maintenance Organization which may require a minimum threshold of 100,000 members for its viability. Making all pay and share the costs enables people to realize the value of health and take responsibility to stay healthy (proper diet, no consumption of liquor or tobacco, etc.).

For ensuring that both the rich and the poor are part of the risk pool, the Government may extend a maximum subsidy of 30% (equally shared by the Centre and State) where

ever the enrolment is 70% of the resident population in a Gram Panchayat notified area, or the risk pool exceeds 15,000. This is on par with what those purchasing private insurance get by way of income tax exemptions. Providing a subsidy on this condition will enable incentives and building community solidarity. To keep administrative costs low, not exceeding 10%, the district administration should utilize its official machinery and local bodies for propagating the scheme and collecting premiums regularly. This in itself would be a subsidy of about 20% to the insured in terms of lowered premiums.

Developing health insurance markets for secondary care

At present, health insurance is a very small and insignificant part of health financing with a total premium collection estimated at Rs 1,100 crore, though growing at 22% per year. Private insurance is concentrated in about 8 cities and 90% of the market share is with the public sector insurance companies. The attempt to use this mechanism to protect the poor from income shocks under the Universal Health Insurance Scheme failed due to two factors: one, the risk pool being confined to below poverty line families already high risk and therefore a losing proposition; and two, not having any institutional mech-

Table 3.3

Number of Workforce by Employment Category, Income Status and Industry Classification – 1999-00

(In Crores)

Industry	RURAL			URBAN			ALL AREAS			Total
	High	Middle	Low	High	Middle	Low	High	Middle	Low	
1. Organised Sector							0.14	1.8	0.87	2.81
1.a. Government							0.14	1.09	0.72	1.94
1.b.1 Agriculture							0	0.03	0.05	0.09
1.b.2 Manufacturing, etc							0.03	0.34	0.17	0.54
1.b.3. Services, etc..							0.04	0.18	0.07	0.25
2. Unorganised Sector	2.23	10.15	12.68	0.9	3.06	4.62	3.12	13.21	17.3	33.62
2.1. Regular Salaried	0.4	0.87	0.43	0.4	1.68	1.35	0.8	2.55	1.78	5.13
2.1.a. Agriculture	0.04	0.11	0.19	0.01	0.01	0.01	0.05	0.12	0.2	0.37
2.1.b. Manufacturing, etc	0.11	0.18	0.11	0.15	0.51	0.4	0.26	0.69	0.51	1.46
2.1.c. Services, etc.	0.28	0.47	0.21	0.37	1.14	0.82	0.65	1.61	1.03	3.3
2.2. Self Employed	1.19	6.56	6.23	0.19	1.31	2.12	1.38	7.87	8.35	17.6
2.2.a. Agriculture	0.96	5.18	4.85	0.03	0.08	0.29	0.99	5.26	5.14	11.39
2.2.b. Manufacturing, etc	0.1	0.55	0.64	0.09	0.31	0.58	0.19	0.86	1.22	2.27
2.2.c. Services, etc.	0.22	0.8	0.67	0.16	0.94	1.14	0.39	1.74	1.81	3.94
2.3. Casual Employed	0.38	3.05	5.95	0.06	0.31	1.16	0.44	3.35	7.1	10.9
2.3.a. Agriculture	0.34	2.11	4.94	0	0.06	0.21	0.34	2.17	5.15	7.66
2.3.b. Manufacturing, etc	0.17	0.52	0.77	0	0.2	0.6	0.17	0.72	1.36	2.26
2.3.c. Services, etc.	0.01	0.2	0.3	0	0.12	0.35	0.01	0.32	0.65	0.98
(1 + 2) Total Workforce	2.23	10.15	12.68	0.9	3.06	4.62	3.27	15.01	18.16	36.44

Source : Extracted from Unit Level Records of Employment and Unemployment Survey, 55th Round, NSS, 1999-00

Note : i) Number of Workforce Measured by Current Daily Status (CDS)

ii) Figures are reconciled using Table 51 of the NSS Report No. 458 and Tables extracted from Unit Level Record data of 55th Round along with the Table from Economic Survey (2003-04). Data on break-up of Urban-Rural organized employment is not available.

iii) High, Middle and Low denotes to household monthly per capita expenditure class.

anism to implement the scheme. What is needed to deepen health insurance markets is a catalyst that can bring in the required volume and velocity. One such option available in the Indian scenario is the merger of the ESIS and CGHS, re-constituted as the Social Health Insurance Corporation of India (SHIC)—the first stand-alone health insurance company in the country—reflecting the vision of the then Prime Minister while launching the CGHS for Government employees to be implemented on a pilot basis in 1954. We are 50 years late.

Social Health Insurance Corporation of India

The premium-setting in both the ESIS and CGHS is inequitable (Table 3.4). For example, while the worker in the informal sector pays 1.75% of his income and the employer pays another 4.75%, a salaried CGHS members contribute less than 1% and here too the contribution is not linked to income, though the benefits are. If the medical component of the ESIS and CGHS can be merged into a Corporation and converted into a professional and independent body known as the SHIC, it will stimulate the establishment of similar health insurance companies, which would double and upscale the health insurance industry. Moreover, by levying uniform charges on all members on a mandatory basis—about 1% of the basic pay—with the Government contributing 3%, the ratio of employee–Government contribution will come down from the current level of 1:9 to 1:3 for CGHS members. The pooling of employee and employer contributions of the CGHS, ESIS and PSUs on a mandatory basis will yield a corpus of about Rs 3840 crore per year—four times the current level of health insurance in the country. In addition, if the Government were to extend one-third premium subsidy for all the poor, it would add another Rs 9000 crore.

By vertically integrating the network of over 2000 dispensaries and hospitals owned by the ESIS, CGHS and the PSUs (where possible/feasible) and converting them into Trusts and autonomous units; expanding membership to others currently not covered; charging user fees for non-members, etc. health facilities can become self-sustaining. Such a move will have five advantages: (i) the administrative expenditures will come down further; (ii) optimize utilization of facilities; (iii) pro-

vide access to urban slum populations and other poor to medical facilities without the Government having to invest additional resources for establishing primary health facilities and health posts in urban areas; (iv) facilitate establishment of the largest re-insurance programme in the country; and (v) later also facilitate a mechanism for equalizing risk — as a concept this implies that all insurance companies pay a part of their premium to this Corporation which in turn reimburses them in proportion to the level of risk. This is the one antidote for health insurance companies not to cherry pick and not resort to excluding high risks under one stratagem or another.

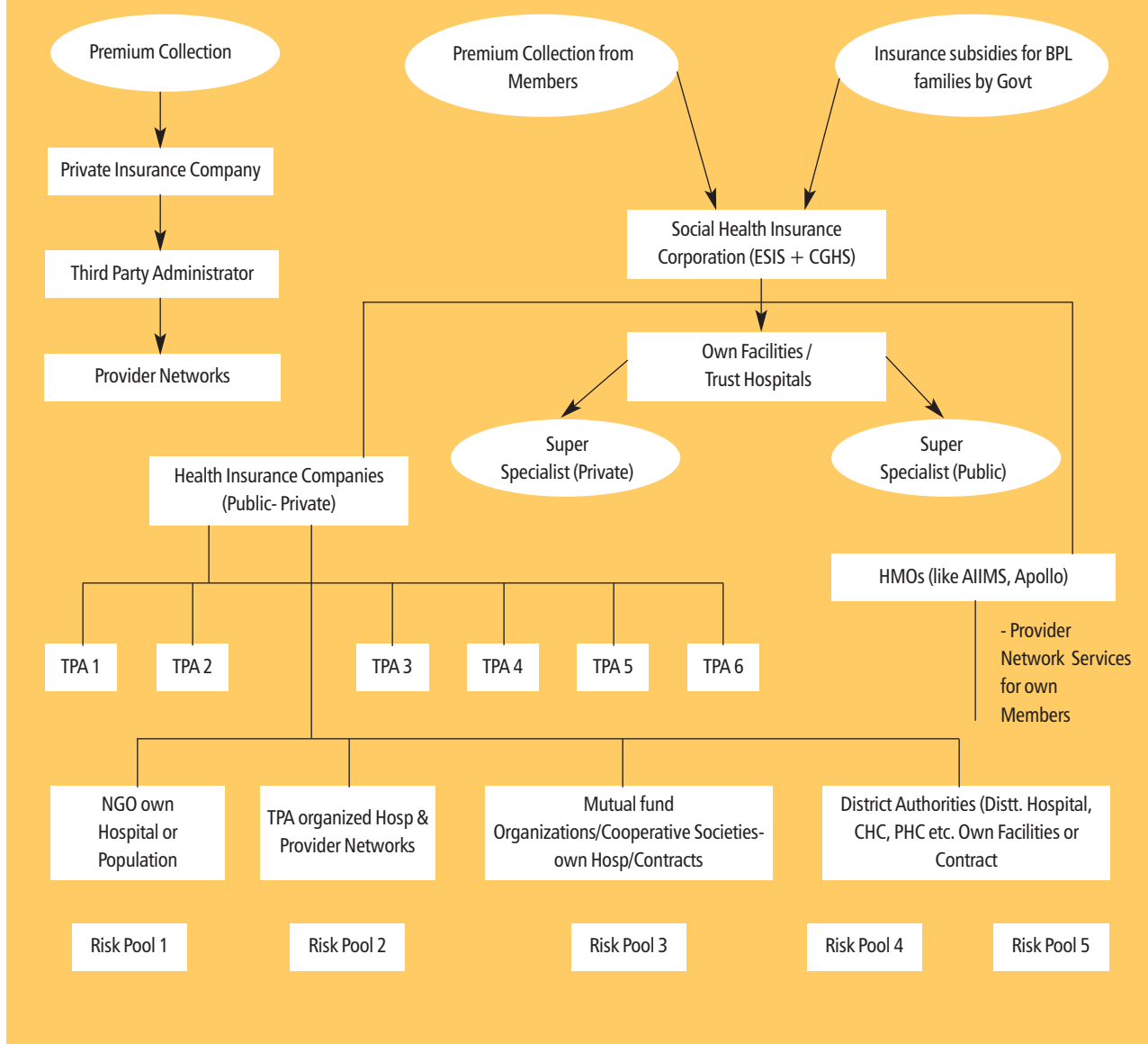
SHIC is envisaged as a re-insurer like NABARD, providing funding to health insurance companies /TPAs (like the SBI), cooperative societies/HMOs (like Grameen Banks) etc. which could all be entities competing for this pool of funds. Such plurality and competition will bring in efficiencies and reduce costs. But for this Corporation to be successful, the culture of management will have to be modernized and professionalized. Second, with consolidation on the demand side, the comprehensive package can be integrated and enforced in hospitals. In the absence of such a consolidation of the market on the demand side, and given the inelasticities of the secondary and tertiary care markets, providers are able to pick and choose what they want to provide and at the rates they wish to charge — an environment where the government and insurance companies are getting short changed. Third, it will also facilitate shifting the current emphasis of insurance schemes on hospitalization and surgery, ignoring primary care interventions. Finally, in the absence of such a framework, merely exhorting the private sector to implement the core package will not yield the desired results and nor will commercial insurance companies find it viable to cover the poor, sick and elderly. US data shows that 1% of the patients consume 25% of the resources, while 10% consume 60% and 20% do not consume any. In such a scenario, private insurance companies tend to enhance their stock value by cream skimming, leaving all the high risks to public systems to bear. (Fig. 3.6 gives a conceptual institutional structure for social health insurance for the poor.)

Summing up, insurance as a means of providing financial

Table 3.4

Funding the Corpus for the Social Health Insurance Corporation of India

				Rs in Crores (2001–02)
	Total amount	Of which government contribution	Employee Contribution	Remarks
ESIS (Medical only)	1200 (most of this is spent on its own network of facilities)	600	600	
CGHS	600	450 (of which about 200 is spent on own facilities)	150	(Rs 41 crore was the employee contribution in 2001–02)
PSU spending on health care paid for employees	2040	1200 (spent on own facilities)	840	(reimbursements, premium, etc.)
Total	3840	2250	1590	

Fig 3.6**A Conceptual Institutional Structure for Social Health Insurance for the Poor**

risk protection for the poor will necessitate the following pre-requisites, alongside announcing the policy intention to make health insurance mandatory within a specified time period :

- Formulate legislation that lays down ground rules and disallow health insurance to be sold along with non life products like fire, rules for administering health insurance as in the case of the other insurance products—a good comparison is the RBI vis-a-vis the banking industry.
- Establish an Independent Health Regulator to administer the law—the regulator should be an independent entity or an integral part of the IRDA to insulate it from exogenous factors.
- Undertake disease classification, development and analysis of datasets, mechanisms for controlling market failures

like moral hazard and induced demand, and enable risk assessment for arriving at a fair premium, etc.

- Develop standards and treatment protocols to come up with a schedule of benefits along with unit cost estimations;
- Establish a National Accreditation Council to license accreditation agencies/assessors to create the necessary competitive environment;
- Establish formal mechanisms for an interface between the IRDA and the Health Ministry, which have the responsibility of health service provisioning and standard-setting. Also establish coordination mechanisms between departments so as not to fragment the risk pools — tendency of DOPT designing insurance schemes for pensioners; textiles department for weavers; the welfare department for the elderly

etc.

- Establish a mechanism for arbitration. At present, there are ombudsmen in the 8 cities with a small office set-up. This will need to be expanded to develop systems for quick redressal of grievances against insurance companies or provider hospitals.

We believe that all of the above can be implemented within one year. We have already lost enough time with ad hoc responses to the crisis that is building up in the health sector. A systematic approach needs to be adopted based on an exhaustive debate on the merits and demerits of the various options available aimed to provide risk protection to the poor based on carefully thought-out designs and to be implemented over a period of 10–15 years.

II. Strengthening public health infrastructure and raising accountability of the existing system of primary health care

To fulfill every individual's right to access basic health care services, the existing primary health care system needs to be restructured and strengthened to make it more functional, efficient and accountable. Substantial investments have to be made to strengthen, upgrade and expand the public health infrastructure to enable them to conform with norms and standards. Besides, till social health insurance does not get rooted, the only option available for insuring the poor against risk and impoverishment is by providing good quality care in the public hospitals. Such investments would be reflective of a pro-poor policy framework as data shows that of the poor who availed of health services, two thirds utilized the public hospitals.

Secondly, the existing system has, in several parts of the country, collapsed for reasons other than under-funding. Lack of accountability, rampant indiscipline, corruption and weak governance and poor management characterize the functioning of the public health infrastructure in the country, more noticeably at the primary level. This needs correction, but such correction will be possible only by incentivizing the system and the active participation of civil society.

Thirdly, the government needs to accept its responsibility to provide basic primary health care to its citizens. To do so within the framework of the guiding principles and to assure that the system is accountable, the involvement of the community and locally elected bodies would be critical. But such involvement does require to be preceded by intensive training and raising of awareness on the various issues pertaining to health as was done in Kerala. Such training and sensitization will have to thereafter be followed up by establishing institutional mechanisms for oversight functions and a spirit of partnership at the different levels of the health delivery system as indicated below:

- Community level – Gram Panchayat (GP), Village Health Committee (VHC), Voluntary Workers
- Subcentres
- PHC – Management Committee – representatives of the VHCs
- CHC – Management Committee – representatives of the

Box 3.1

Mandatory Function of the Local Bodies

1. Registering of births, deaths and marriages.
2. Ensuring chlorination of and monitoring fluoride content in drinking water resources.
3. Supervising the work of the ANM, AWW and VLW and ensuring 100% coverage of malnourished children, immunization, ANC of FP pregnant mothers and treatment of minor ailment.
4. Providing a suitable place for location of drug depot, a delivery and examination room at a place suggested by the VHC.
5. Preventing prenatal diagnosis of sex of child & sex-selective abortion.
6. Preventing child marriage.
7. Arranging transport of patient to a health facility as per protocol, such as for example ensuring transport of blood slide of a fever case to the PHC within 12 hours
8. Organizing sterilization operation camps.
9. Conducting insecticide spray in area.
10. Preventing water accumulation in open places and ensuring that families keep overhead tanks covered.
11. Developing hatcheries for fish.
12. Social rehabilitation of injured /mentally ill person & elderly.
13. Carry out any other activities as recommended by the VHC.
14. Providing all assistance to Health training in case of any epidemic and/or carrying out Public Health measures as per advisories issued by the DHA.
15. Coordinate with the VHC for the proper implementation of the Health Care programs
16. Assist authorities in resource mobilization
17. Ensure environmental hygiene & waste disposal.

PHC, Panchayat Samiti

- District Health Authority – Representatives of CHC – MC, ZP (see p.101)

(i) Community level

Community health should be the responsibility of the community.

- Gram Panchayats (GP), as elected local bodies, must be legally mandated to carry out certain functions such as environmental hygiene; maintenance of birth, marriage and death registration, etc. To carry out these functions, training and funds should be made available by the Government for bridging deficits, if any, and be authorized to raise local taxes.
- Village Health Committees (VHC): The GP should be required to call for a Gram Sabha and ensure the constitution of the Village Health Committee (VHC) consisting of Gram Panchayat representatives and the community at the rate of 1 person for every 15 households with 50% membership earmarked for women and SC/ST. The VHC members should work on an honorary basis to reiterate and emphasize the value of social responsibility, voluntary work and social par-

Box 3.2**Responsibilities of Village Health Committee**

1. Undertake Promotive activities to ensure 100 % access to safe water; toilets; and schooling of all children
- 2.. Promote social harmony and security of women.
3. Make arrangements for collecting vaccines from PHC for sub centre for immunization & returning unused ones.
4. Promote implementation of social legislation against dowry, early marriage and girl infanticide and violence against women.
5. Ensure proper functioning of PDS and ICDS programs in the village with targeted focus to pregnant women and infants.
6. Organize well baby clinics every month for ensuring 100 % immunization.
7. Conduct campaigns against alcoholism, tobacco use, drug use and unsafe sex.
8. Make arrangement to counsel families having a HIV/AIDS positive person and arrange for the care of the orphans or impoverishment of the family due to the breadwinners' death.
9. Promote personal & environmental hygiene.
10. Assist the VLW/ AWW/ ANM regarding implementation of activities.
11. Provide assistance to the Gram Panchayat in carrying out all the mandatory duties listed.
12. Assist in training the community drug depot and providing easy access to medicine & conducting the clinics.
13. Promote the development of herbal gardens in common land and individual plots.

ticipation, which are hallmarks of a democratic society.

The primary duties of a VHC should be to enhance the social development of their community, improve their health status and undertake a range of functions, for which it is recommended that a Village Health Fund (VHF) be instituted with a matching grant from the Government. The VHCs should be facilitated to assist the Gram Panchayat in discharging its functions and carrying out social audits. Box 15 provides the functions envisaged for the GP and VHC.

- **Village Health Worker (VHW):** The VHC will select a person(s) to be trained for carrying out a set of health functions and also help run the drug depot to provide treatment for minor ailments, and assist households to access basic services. The village level worker (VLW) will be a voluntary worker but the VHC, can, if considered necessary, provide the VHW a remuneration out of their own share of contribution to the VHF. The idea of VHW is not new. It has been experimented in India since 1976 with uneven outcomes. It is therefore essential that this intervention be designed keeping in view the historical experience and view it more as a part of the demand side strengthening than an input from the supply side.

(ii) Subcentre for every 5000 population

For better use of the funds spent on subcentres, it is more

cost-effective to strengthen it with the appropriate complement of staff. We recommend that three persons-2 ANMs supported by the government and a trained male worker contracted by the VHCs should be available at every subcentre for ensuring that subcentre services are available on a regular basis, throughout the year.

Since the conditions of work are extremely unsatisfactory, making the subcentres virtually non- functional, investment for building this infrastructure has to be given priority. To reduce costs and delegate responsibility to the VHC – GP, it is recommended that the construction of the subcentre should be undertaken by the community as part of the Weaker Sections Rural Housing Scheme by HUDCO, and/or as part of the Employment Guarantee Scheme. This would ensure that subcentres are constructed as per need, at locations convenient to them and owned by them. The construction of such units will generate rural employment and unleash awareness about health. Such construction should be taken up even in areas where there is a subcentre building but is either in an unusable condition or unsuitable location. Such buildings should be handed over to the community for alternative use.

Since subcentres cost money and ANMs are essentially for maternal and child health services, in States where institutional deliveries are high, the transportation network good and health-seeking behaviour demand higher levels of expertise, the choice of continuing with the subcentres in such areas/states should be given to the States (for example Kerala, coastal AP, TN, Haryana, Punjab). Such States can consider other options : for example, ANMs with different skills such as counselling for non-communicable diseases (NCD) and care and support for HIV, mental health patients, etc. to reflect the evolving health needs in the community, or to use this budget to strengthen the PHC / CHC as required, based on patient load/ health seeking behavior. On the other hand, several subcentres have unviable and unmanageable jurisdictions. There is a need to increase the number of subcentres based on a need-based survey to be measured both in terms of population (case-load) and distance (such as not being more than half an hour away) . Annexure VI gives the current and proposed costing of a subcentre.

(iii) Primary health centre for every 30,000 population

Given the failure of the current model of primary health centres for 30,000 population, norms require to be revised to make them functional and cost-effective, such as for outpatient services and emergency care. Accordingly, against the current norm of 10-16 persons staffing this unit, a core team of 6 persons consisting of the following skills may be provided as a norm:

- (i) One Medical Officer with 4 year training in AYUSH and additional training in integrated medicine. This is an important institutional intervention to propagate and give wider accessibility to AYUSH systems of medicine which are more holistic, by and large less costly, more sustainable, locally acceptable and more focused on well-

ness and good health values. Such an arrangement will also help guide and monitor use of Ayurveda / Unani, including yoga and other traditional medicine/knowledge in the community through the VHC and subcentres.

- (ii) Three nurses to be appointed to make the PHC a 24-hour facility for providing health care for women, counselling and education on sexually transmitted diseases, family counselling, and promoting institutional deliveries, which is necessary for reducing infant and maternal deaths;
- (iii) One Laboratory Technician and one Pharmacist (or a Public Health supervisor) for conducting laboratory tests and dispensing medicines, keeping records, and indenting drugs. Annexure VII gives the current and proposed costing of a primary health centre.

Others

Ophthalmic assistants (PMOAs), nurse practitioners, dentists, health workers, trained counsellors are other skilled workers required by the community. Such skills should be hired on per case / per day basis for running weekly clinics, school clinics every quarter, assisting in specific services required by the community, etc. Such an arrangement will be cheaper and more sustainable.

PHC Management Committees (PHC-MC): For institutionalizing a measure of social accountability, the PHCs should work in consultation with and under the supervision of the PHC-MC with representation from all Village Health Committees and 50% women and SC/ST. The MC will be expected to review the functioning of the PHC and be empowered to hire persons on contract, recommend/take minor disciplinary action or withhold salary or transfer front-line workers, etc. For enabling the MC to undertake such functions, due training and detailed guidelines will need to be drawn up to ensure that there is no misuse of power or harassment of public servants. The monthly review of the MC should be sent to the CHC Management Committee.

(iv) Community health centre for every 100,000 population

In the current structure the CHC is disassociated from primary health-unrelated to community health needs. This needs to be corrected. Second, there is a need to revise the existing norms and standards as, in the light of the overall shortage of specialists, appointment of MBBS doctors after 9 months' training in gynaecology, surgery, anaesthesia, paediatrics, general medicine, and public health and clinical epidemiology may be a more feasible option. Annexure VIII gives the current and proposed costing of a CHC.

The CHC is envisaged as the Primary Administrative Health Unit (PAHU) vertically integrated with PHCs and Subcentres with powers for administrative supervision of the PHCs and Subcentres delegated from the CMO at the district level to the CHC Superintendent. It is accountable for ensuring universal access to a defined package of health services at all

times throughout the year.

CHC Management Committee (CHC-MC)-The first policy level for intersectoral coordination: The CHC will also have a MC consisting of members from each PHC area, the Panchayat Samithi, the Block Officer for water, sanitation, nutrition and school education programmes, the BDO and the Chief Revenue Officer. This body should be empowered to monitor the functioning of the CHC, hire personnel, review financial expenditures and budget utilization, take minor disciplinary action, approve Annual Plans, monitor village-wise health activities, etc. The Committee will be responsible for achieving the National Health Goals and implementation of the activities included in the PAHU Annual Action Plan. They will also review the functioning of the ICDS, water, sanitation and female literacy programmes and send their comments to the Panchayat Samithi, if required. This would help strengthen the focus on the intersectoral coordination of health and its determinants.

The CHC should not be viewed merely as the first contact point for curative care but as a necessary institutional tool for monitoring the health of the population under its jurisdiction, through the Epidemiological and Public Health Unit (EPHU). The EPHU should collect health statistics, conduct community surveys on disease burden, assess quality of water samples, promote toilet use, evaluate the health status of the children, register births and deaths, conduct and report mortality reviews, collect and report surveillance data collected from the community, other health units and private sector facilities, audit maternal and infant deaths, prepare Annual Action Plans, and disseminate health information. Such information dissemination will be the most powerful tool for making people aware of their health status and for assessing the corrective action that needs to be taken, among which social groups and for what.

Standardize, strengthen and upgrade the technical capacity of the PHC/CHC

At present, there is a plethora of institutions that are functioning suboptimally—dispensaries, mini PHCs for 16,000 population, CHCs with 10 beds, Taluk hospitals in the same place as CHCs, etc. In some states, different departmental heads administer these institutions. This needs to be standardized and rationalized by mergers. Just one such administrative action will improve efficiency, increase savings and much enable greater cohesiveness in administration and supervision. Such restructuring should be the first precondition for any central assistance.

Once standardized, the PHCs and CHCs need to be strengthened, and made to conform to a set of simplified standards that should reflect the functions they are expected to perform and ensure consistency between staff skills, equipment and drugs. Standards should also go beyond the mere listing of equipment and physical space to being clear statements of the services to be provided by the facility, functions to be discharged, skills and other logistical support that should be available; the distance at and time within which the service(s) are to be provided, bed occupancy rates and OP patients examined per day, maintenance of patient records, waste

disposal practices, etc. Information on how much it costs to provide a service in these facilities will enhance people's awareness of the value of the service they are getting and in the event of user fees being imposed, the reasonableness of cost-sharing.

(v) Access to secondary care

Subdistrict hospitals for every 500,000 population and district hospitals at district level

Health facilities at subdistrict and district hospitals are expected to provide specialist care addressing those diseases/conditions needing a wider range of technology and expertise. The market at this level is highly competitive with a well-entrenched private sector filling the void that an underfunded public sector has created. However, since these markets are also inelastic, people still seek treatment even at the cost of impoverishing themselves. Therefore, till a social security system is in place, it is imperative that public facilities be upgraded and provided adequate budgets to create the necessary posts, upgrade equipment, expand the facilities and beds strength to cater to the increased demand for such service. Moreover, as treatment costs are three times higher at subdistrict, district and tertiary hospitals than if provided at CHCs or PHCs, the referral system must be implemented vigorously as a cost effective measure for containing cost.

(vi) District Health Authority

To manage the public health infrastructure as a vertical unit stretching from district hospitals to subcentres and to ensure that each level discharges its responsibilities, an institutional mechanism such as the District Health Authority (DHA) is required. Besides, as the Government gradually shifts towards being a purchaser of care, there will be need for institutional capacity with professionalized skills to attend to the complex tasks of negotiating, contracting and monitoring. The existing District Health Society could be reinvented/revamped to discharge the role of a DHA. The DHA could consist of professionals and experts, senior officials, leaders of the community and representatives of CHC/PHC/VH Management Committees, as stakeholders of the public health system, to oversee the functioning of public health facilities, preparation of the District Health Plan, transfer of public subsidies to the facilities for implementation of the Annual Plans, monitor fund utilization and the adherence to the guiding principles. The main focus of the DHA should be to make all public facilities benchmarks for low cost and appropriate health care, and effectively compete with the private sector. The specific responsibilities of the DHA are visualized as below:

- Implement standards for all facilities from subcentres to district hospitals;
- Provide capital investment to upgrade facilities to conform to standards;
- Undertake mapping of all facilities to restructure the health

system in accordance with the norms of distance, case load and need;

- Identify accredited private facilities to provide services listed in the schedule of benefits;
- Delegate operational autonomy to all public hospitals based on clear guidelines and specific outcomes;
- Undertake unit costing of all procedures and services for preparing a schedule of benefits. These charges should be the basis for service provisioning in the public or private sector and must be mandated by law.

III. Reducing the disease burden

Nutritional security is a fundamental determinant of health and therefore an important prerequisite for the effective containment of disease. Anemia is an important cause of pregnancy related deaths. Likewise, 30% of births in India are low weight. Research done elsewhere show a causal connection between low birth weight and higher probability of acquiring diabetes or hypertension and obesity at later ages. Considering that it is predominantly the poor who have low birth weight babies, increased incidence of diseases that are expensive to treat among this segment of the population has serious financial implications, both for the poor households as well as public finances that are spent on subsidizing the care of the poor. Therefore, beside the moral imperatives of addressing such "hidden hunger", the utilitarian argument of cost effectiveness of policy intervention would also support strong public action on taking concerted action to reduce the unacceptably high levels of malnutrition in India and improve overall population health.

Special central assistance for reducing the disease burden: A case for differential planning

As already indicated in Section I, analysis of 321 districts, showed that 163 districts were lagging behind. If these districts are focused upon single-mindedly and monitored closely there could be substantial benefits in terms of improved health and reduced disease burden in the country as a whole. Since persistence of disease and the high risk in these districts is largely on account of poor programme implementation, intervention by the Central Government in the form of extra budgetary support for appointing full-time front line public health functionaries and closely monitoring them could be very useful.

Accordingly, it is recommended that for these districts, Central assistance may consist of a comprehensive package of recurring and non-recurring components, including recurring expenditures for critical posts for ensuring that the program targets are achieved within the time lines laid down. It is suggested that the following positions be supported:

- (i) Districts with high prevalence rates of leprosy, having more than 5/10,000 cases-14 districts-1 Leprosy Officer at the CHC for 3 years;
- (ii) Districts with a high prevalence rates of malaria-28 districts with more than 2 API-1 Malaria worker at the

- Subcentre for 5 years;
- (iii) Poorly performing RCH districts- 1 Nurse Practitioner at the PHC and 1 Lady Medical Officer or Gynaecologist at the CHC for 10 years. (See Annexure IX)

Prevention and low-cost strategies for behavioural change

Reduction in pre-transition and post-transition diseases will need a shift from a curative, techno-managerial approach to a biomedical, public health approach, which implies social participation and sharing of responsibility at the individual as well as the societal level. Behavioural change—from washing hands with soap, to refraining from tobacco, drug and alcohol consumption to wearing safety belts—directly impact on health and need to be engineered, guided and nurtured through a combination of instruments—regulations, incentives, exhortations through the media, public information and societal pressure as witnessed in AP during 1993 where poor, illiterate women forced the State to moderate its excise policy. With this in view, six sets of actions need to be taken:

- (i) Step up funding for health education and IEC to launch public health campaigns for promoting environmental hygiene, family health, anti tobacco and alcohol, etc. The Commission recommends that the IEC budget for the NHPs' be increased substantially by at least twenty times from the abysmally low amount of less than 0.5% of the total departmental budget.
- (ii) **Formulate a National Health Information Policy:** At present, different programmes utilize mass media channels for dissemination of information. Given the exorbitant rates of advertisements on commercial channels and small budgets, the frequency and spread of information are low. For coping with diseases like HIV/AIDS that have no cure and require behavioural modifications, or emergencies like the SARS outbreak, there must be a national policy that makes such vital information accessible to the public within a short time. Likewise, advertising non-health products without providing full information, and use of images and data that could cause confusion need to be regulated. It is recommended that as a first step, the Government prepare a Health Information Policy in consultation with all stakeholders.
- (iii) **Village Health Fund:** Prevention of disease and promotion of public health cannot be the sole responsibility of the administrative department but require the wider involvement of civil society, through participation of NGOs and empowered VHCs. In addition to endorsing the recommendation of the NHP 2002, earmarking a proportion of the health budget for NGOs, the Commission also recommends that funding be provided to VHCs in the form of a Village Health Fund. This fund should become the nucleus for health action within the community and could range from getting public water taps repaired, to clearing all mosquito breeding grounds, improving the sanitation of public areas in the village, to holding health camps for the medical check-up of all

children, and organize campaigns against alcoholism, drug abuse or spreading awareness against tobacco, etc. In other words, we believe that health information is not to be treated as a product to be 'given' or 'delivered' to passive recipients in the villages but an empowering tool where women and community leaders are enjoined to determine the future health status of their families and community members.

- (iv) **Accord importance to AYUSH:** AYUSH systems can have a major role in preventive and health promotion practices through 'sadvritta' (ethical conduct) and 'swasthivritta' (preventive behaviour); 'dinacharya' (daily regimen) and 'ritucharya' (seasonal regimen), which emphasize individual health practices to prevent most health disorders. As Ayurveda and Yoga combine holistic and integrative strategies, the strengths of these systems of medicine, particularly for the treatment of chronic diseases such as diabetes mellitus, obesity, chronic respiratory disorders, hypertension, anxiety, etc. should be aggressively promoted by emphasizing lifestyle interventions in terms of aetiological factors, dietary modifications, exercise, an optimum work culture, sleep relaxation methods, sexual control, etc. Accordingly the budget for Ayush should also be substantially increased.
- (v) **Strengthen public health:** It should be made mandatory to earmark posts that require a public health training and thereafter ensure their training before appointing them in those posts. Besides, at the Central, State, district and CHC level an Epidemiological, Public Health and Disease Surveillance Unit needs to be established. It is recommended that GOI extend financial support to States for the establishment of such EPHUs and DSUs for a period of ten years (Fig. 3.7).

While such measures will help restore the importance of public health in the short run, the medium and long term, it is necessary that a bold decision be taken to constitute an All India Cadre of Public Health Services, on lines like the IAS/IPS. The rapidity with which the health sector is changing, it is essential to induct into the system new skills, modern mind-sets and a measure of dynamism and idealism. Such young recruits, well trained in public health and related subjects, can then bring in new dynamism to the flagging public health systems at the district and sub district levels. And over time provide a soundly trained cadre of public health specialists able to occupy key positions all the way up to the policy-making levels. Such an All India cadre is fully justified given the growing complexities of the sector.

IV. Regulations and institutional infrastructure for coping with health markets

As noted earlier, regulations to contain market failures, so typical of the health sector, would be required to be put in place in the first instance, calling for reviewing and updating existing ones and identifying new areas. Besides regulations, in order to facilitate the paradigm shift proposed for financing and organizing the health system, there is a

need to establish complementary mechanisms to develop capacity for enforcement of regulations; evolve flexible and innovative approaches, and institutional capacity to provide policy-makers with a critical mass of multivariate skills. As factors impacting upon health are never static, there is a need for continued vigil and a system with the ability to synthesize information from various sources and assess health implications at present and in the future. The Commission believes that the institutional infrastructure listed below is a bare minimum and recommends its establishment on priority.

1. National Drugs Authority

A National Drugs Authority (NDA) for drug regulation as recommended by various expert committees should be established. It would be responsible for regulation and monitoring of drug quality, efficacy and safety, monitoring, evaluation and dissemination of findings of clinical and drug trials, pricing and rational use of drugs. While the long-term goal should be to bring 'drugs' under the Central list for assuring uniform quality and better enforcement of regulations, in the short term the Commission recommends Central Assistance for appointing an adequate number of inspectors for monitoring and surveillance activities of the NDA. This should be a self-financing body mobilizing its funds from licence fees.

2. Indian Medical Devices Regulatory Authority

Rapid technological advances leading to an increase in medical devices and critical care equipment have revolutionized the preventive, diagnostic, rehabilitative and therapeutic capabilities of the medical sciences. The industry in India is estimated to be worth \$1.5 billion of a fast-growing \$260 billion industry worldwide. Of these Rs.5000 crores worth market of medical devices 90% are imported providing a huge potential for growth in the manufacturing industry for medical devices. This calls for stimulating domestic industry to take interest in this market, by instituting a mechanism to coordinate the manufacturing and hospital industry and the IT sector. Besides, medical technology needs to be regulated from the point of view of appropriateness and patient safety, minimize the overuse, facilitate investment and regular testing for quality assurance etc. For carrying out these multiple tasks that need integration of a combination of expertise – engineering, physics, electronics, computer technology etc. it is well beyond the capacity of the Ministry of Health to cope with it as the Ministry of Health is only the end user. Therefore the IMRDA needs to be established as an independent autonomous entity with members from DST, DRDO, CSIR, INSA and Ministry of Health, as a self financing unit working through state level DST departments, academic institutions like the IITs, universities and other research institutions of the industry. An authority to regulate various aspects of this industry may be constituted as suggested by a High-level Committee constituted by ICMR and the Sikka Com-

mittee of the Indian National Science Academy (INSA).

3. Institutional mechanism for expanded public procurement of essential drugs

For making drugs available at reasonable prices in the public health system, autonomous bodies like the Tamil Nadu Medical Services Corporation (TNMSC) should be established at the Central Government and State levels. The required funding for this should be allocated by disposing of fixed assets of the near-defunct Medical Stores Organization valued at about Rs 100 crore.

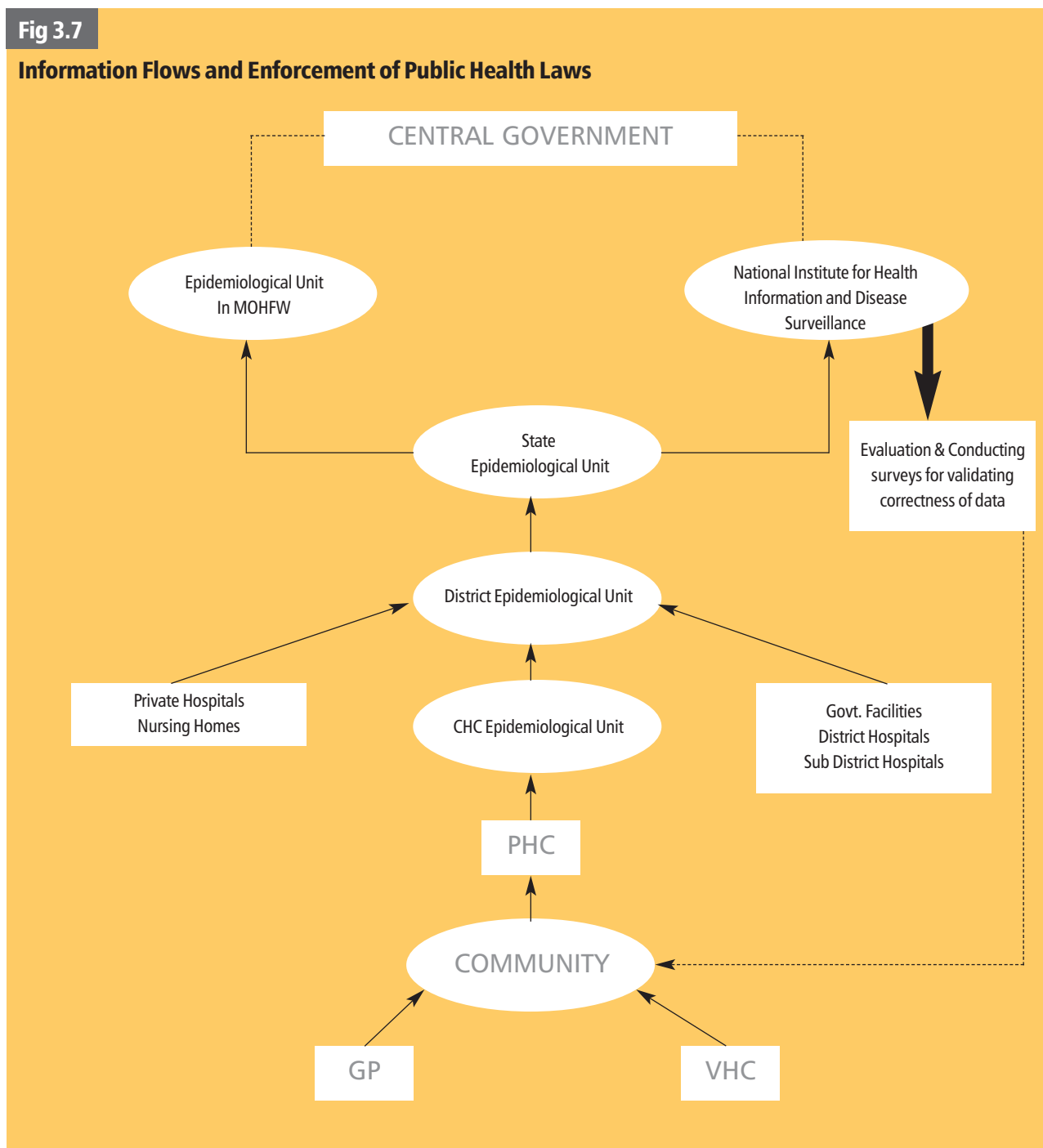
4. National Institute for Health Information and Disease Surveillance

A systematic policy approach to research and evidence requires to be built up. The existing CBHI in the DGHS's office is inadequate, with neither the requisite skills nor infrastructure capacity. A National Institute for Health Information and Disease Surveillance needs to be established as an autonomous body consisting of Board members from other ministries, statisticians, researchers and State-level policy-makers. The Institute must also have a multidisciplinary composition comprising economists, public health specialists, epidemiologists, biostatisticians, nurses, sociologists, anthropologists, doctors. Disease burden estimations, National Health Accounts, cost-effectiveness studies of interventions, efficacy of vertically driven interventions, including ICDS in countering the problem of malnutrition in the country, independent evaluations of programme implementation are examples of the kind of work that needs to be undertaken. In the absence of such capacity, current policy-making is ad hoc and driven by individual perceptions. The Institute should have its own research budget. The current excessive dependence on donor funding for research is one reason for the weak research capacity in India and the huge gaps in knowledge, as donor priorities are not always aligned with country needs. Fig 3.7 depicts the information flows and the institutional structure for enforcing public health laws.

System of statistical data and collection

In India, health information exists at various levels, forms and systems. There is a wide variety of data that are collected by several agencies, mainly government, both at the Central and the State levels through routine data collection and periodic sample surveys. There is a plethora of information concerning the health sector but in a highly fragmented manner. The health management information system at the ground level especially tends to be duplicated by various agencies.

A major problem of health information is the reliability of data and consequent utilization for decision-making. In some respects, the reliability, relevance, timeliness and quality of the data are questionable. There is therefore a need to review national

Fig 3.7**Information Flows and Enforcement of Public Health Laws**

health information systems at various levels – Central, State, district and block – by various agencies – different ministries and departments in the government – method of data flow, gaps in data, utilization of the data, organisational set up, accessibility of information to various persons at various levels are aspects to be examined. Such a review would help in improving data collection techniques and quality, selectively expanding and examining the data load at various levels, different types of information sources, biases in data management, reporting of data transmission, vertical, horizontal, utility and use of infor-

mation, protocols for monitoring and evaluation of health information systems on a routine basis.

These shortcomings are known and have been spelt out by the Statistical Commission of India. We recommend that action be taken to implement the recommendations made therein with regard to the particular needs of the health sector. Non availability of good quality data and reliable baseline estimations are responsible for lack of clarity in policy design and strategies being adopted.

Development of research capacity

The skills required for discharging the tasks outlined above are relatively non-existent in India. In a billion population, there are a handful of health economists and biostatisticians. It is recommended that along with domestic resources, external aid, WHO assistance etc. be fruitfully utilized for developing such capacity by earmarking fellowships every year to institutes of excellence abroad and within India. Of the total 25% must be at the doctoral level and the rest at the Master's level. It should be our target to have a pool of at least 500 persons with a combination of such critical skills by the end of 2012. Such fellowships should be open for competition and not be confined to central government employees of the Ministry of Health. This will help develop capacity and expertise outside government and be available for policy advice in an objective manner.

5. National Commission for Quality Assurance (NCQA)

The need for institutional mechanisms for quality assurance in health is acknowledged. In the absence of State intervention in this regard, private organizations are already attempting to fill the gap. Since there has to be uniformity and standardization, it is necessary that the Government establish by law the NCQA as a certifying agency to license various accreditation bodies, design and approve the course and remuneration for assessors, establish minimum physical standards that should form the basis for accreditation, and also be the notified authority to settle disputes.

6. Research & development — National Institute for Health Research

With the introduction of product patent laws in India, there is a strong case for investing in indigenous research and encouraging Indian companies and universities in partnership to engage in R&D for drugs, medical devices and vaccines relevant to the needs of India's poor. For developing a culture for research, the Government should initiate steps to de-bureaucratize procedures, introduce greater transparency, provide incentives and adequate flexibilities to enable engaging and retaining the best minds to undertake research—both in public and private universities and research institutions. Second, development of new drugs from the knowledge and information possessed by a community must ensure that part of the financial benefits from the use of these drugs flows back to the community that initially owned the knowledge.

An R&D policy needs to be formulated for assuring drug, medical technology and vaccine security and investing funds for upgrading public sector research institutions at Kasauli, Conoor and research institutions of the ICMR, DST, CSIR, DRDO, DBT, Universities etc. While the ICMR institutions need to be evaluated, there is also a need to establish a new department for Health Systems Research and build multidisciplinary research that must include the blending of physical,

medical and social sciences. Such capacity is necessary for undertaking operational research as also large-scale trials of traditional systems of medicine if we are to tap the global market. A doubling of the budget for R&D seems justified for undertaking research in frontier areas and quickly bridging the existing knowledge gap between the advanced countries and India.

Besides stepping up health systems research, there is also an equal urgency to establish regulations, strict ethical norms and transparency, standardize methodology and international standards of research for tapping the global market for clinical research. India has the possibility of becoming the international hub of clinical trials. With its quantum of well-trained physicians, pharmacologists and clinical pharmacologists, the availability of a large untreated naïve population providing numbers, the relatively low cost of conducting trials, the recent patent regulations and fluency of our doctors and scientists in English, India has a huge comparative advantage that gives it an opportunity to be at the forefront of drug discovery, besides earning valuable foreign exchange and providing employment to many.

To facilitate this process, a Registry of Clinical Trials, open to the public domain, needs to be established; centres carrying out clinical trials accredited; competent clinical investigators identified; and a dialogue on the ownership of the data and dissemination of the results of such trials initiated. Likewise, on the regulatory side, the Government will have to streamline its own procedures: strengthen the Drug Controller General's office considerably; establish a 'One Window' system for time-bound decision-making to accord approvals for requests in a transparent manner; and publish clear guidelines on the procedures to be followed, to avoid the confusion and duplication of who is responsible for what—Department of Biotechnology, Department of Science and Technology, Indian Council of Medical Research, Drug Controller General's office or the Department of Environment, etc.

Given this very substantive agenda and importance of R&D in health, time has come to upgrade the ICMR into an autonomous department like the Department of AYUSH. This has been a long standing demand which needs to be accorded serious consideration.

7. National Commission for Health and Medical Education

The steady deterioration in the quality of training in professional colleges needs to be immediately arrested by strengthening supervision. Development of quality standards in teaching as well as service delivery, designing new courses to cope with the rapidly changing disease profile and fostering an environment for quality in health care and patient safety require to be attended to by an autonomous body, in the absence of such leadership forthcoming from either the MCI or professional organizations. For addressing the demand for standardization and making teaching institutions benchmarks for excellence in patient care, it is recommended that

a National Commission for promoting excellence in health care and medical education be established.

8. Health Financing Corporation of India (HFCI)

The Public Health sector alone needs a capital investment of close to Rs 50,000 crore to meet the current needs. To enable health facilities to conform to standards over the next five to ten years HFCI, like the ILFS, could be a useful mechanism.

Figs 3.8, 3.9 show the proposed institutional framework to govern the health system.

Institutional mechanism for enforcement of regulations

The Commission recommends that action to strengthen the enforcement machinery in four principal areas be initiated:

- Institution of Quality Assurance Cells in the Ministries of Health at the Central, State and district levels, and in all provider facilities for imparting and raising a sense of awareness about quality in a comprehensive manner.
- Establishment of Epidemiological Health Units at the Ministry of Health at the Central, State, district and CHC levels

Fig 3.8

Organogram of the Ministry of Health & Family Welfare (current)

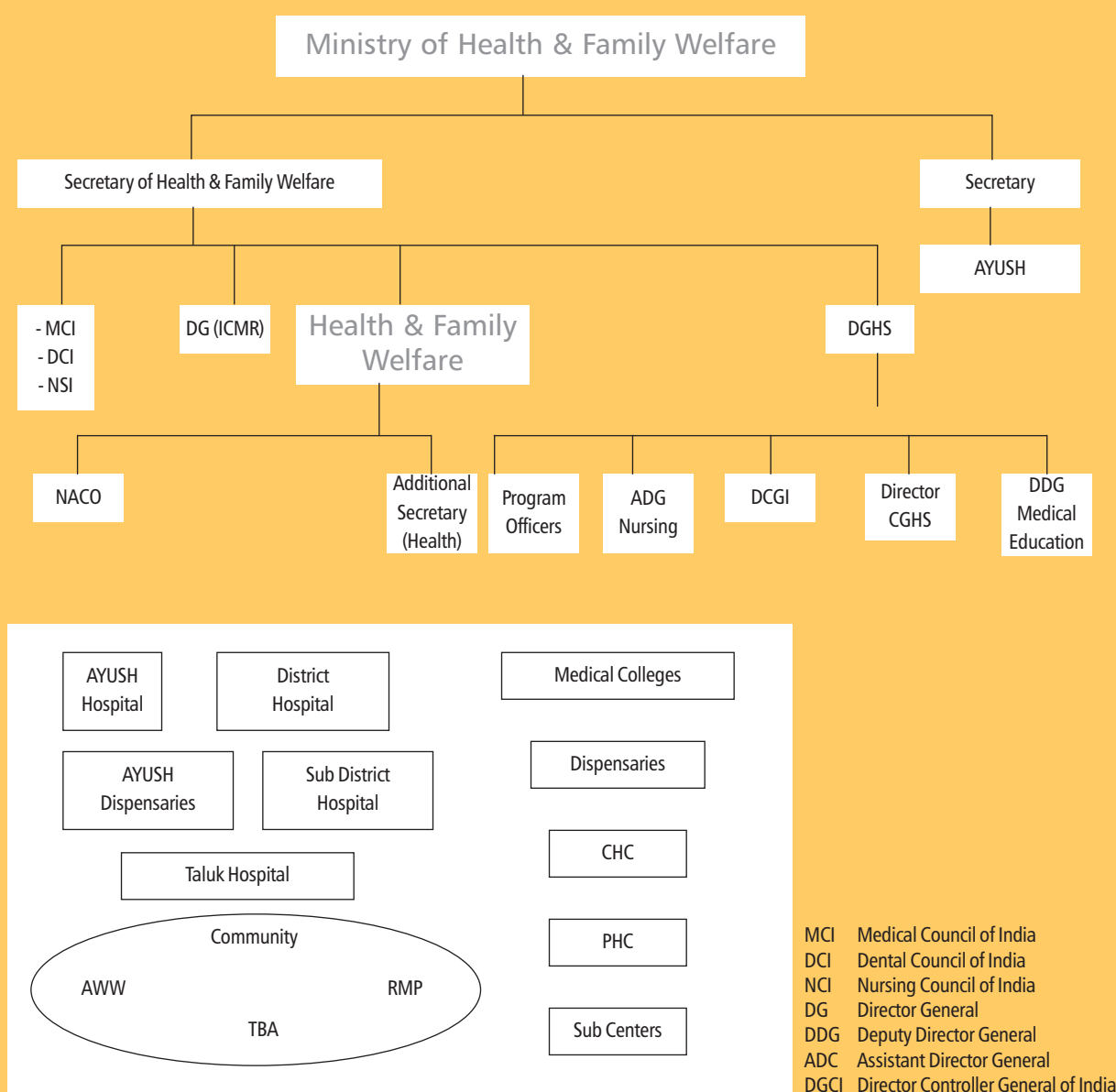
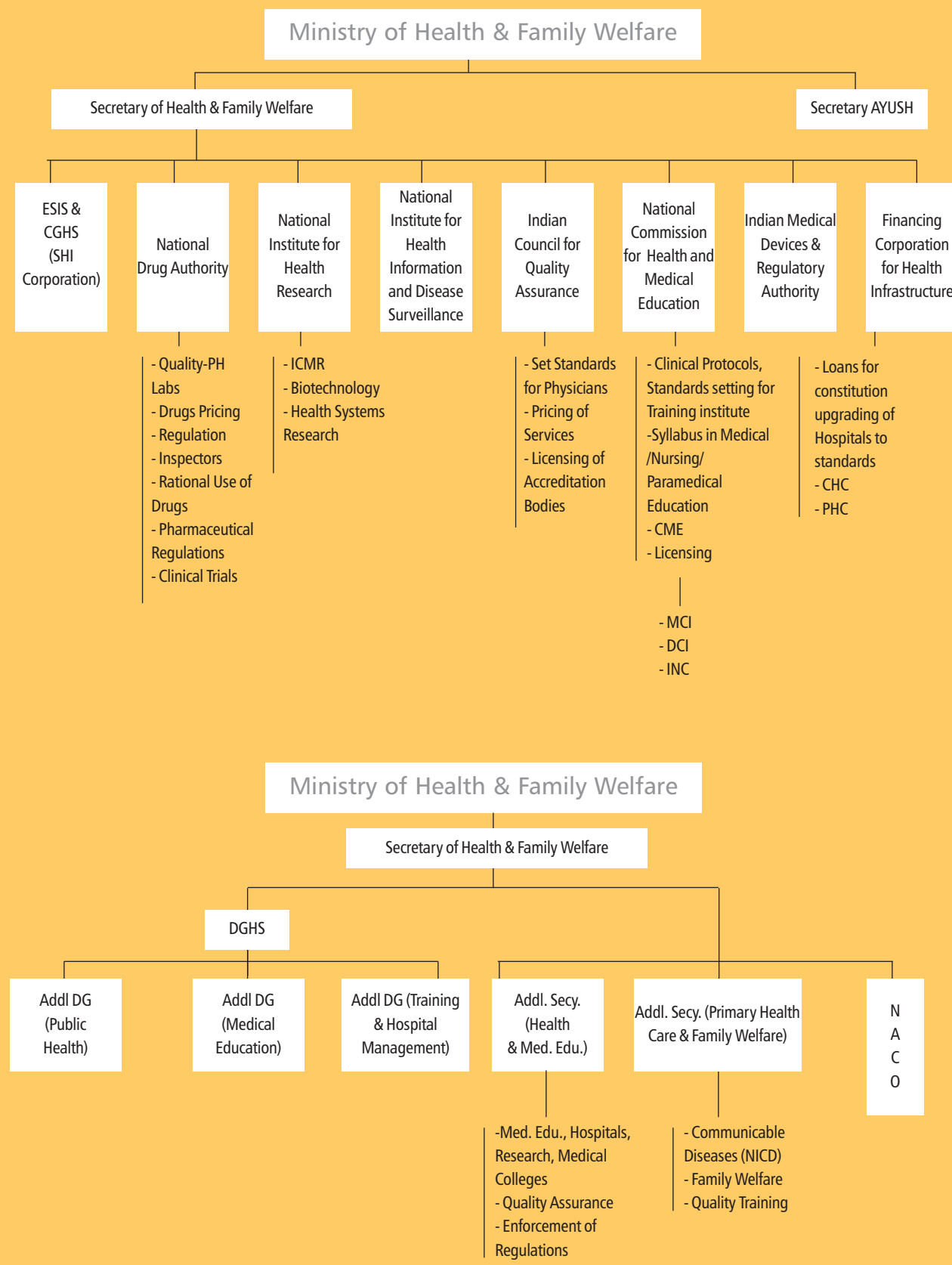


Fig 3.9

Proposed Institutional Framework

to monitor public health laws, enforce regulations, and disseminate information to the public on public safety measures, etc.

- Provisioning of adequate number of drug inspectors at the local level for monitoring and enforcing compliance to regulations.

Financial support to professional councils such as the MCI, DCI and NCI: No country has been able to enforce regulations or quality assurance mechanisms through force or the power of legislation alone. All countries have had to negotiate and dialogue, and through persuasion and peer pressure obtain the commitment for high-quality patient care from professional bodies. In India, it is a sad reflection on the health profession that regulatory bodies have a public image of corruption and nepotism. The Commission recommends that the Government initiates action to open up the membership of these bodies to civil society and non-medical persons, provide them financial support to discharge their functions in a professional manner, develop and maintain databases of doctors who are licensed/have gone abroad, organize CME and re-certification programmes, and design vigilance procedures for those who have been de-licensed for malpractice.

V. Professionalization of service delivery

1. Human resources for health:

Professionalization of human resources for health is imperative in a knowledge-technology driven global environment. Low-cost solutions are inadequate for coping with the extraordinary situation prevailing in India. Radical reform is the need of the hour. Some suggestions are listed below.

Nursing:

It is recommended that in another 5-10 years, 225 new nursing colleges be established, 769 schools be upgraded and 266 colleges be strengthened: Action must be initiated to develop the 10,000 nursing faculty required for these institutions by providing fellowships and other incentives. As an estimated 3.5 lakh nurses would be required by 2015, hospitals/medical colleges with over 500 beds should also be encouraged to establish training schools, while concurrently developing stringent norms and enforcing mechanisms of quality assurance.

Medical Colleges:

To ensure equity in the distribution of qualified doctors across states, establish 60 new medical colleges in states having a shortage-UP, Bihar, MP, Orissa, West Bengal and Rajasthan. At present, the number of teaching faculty required in these colleges are inadequate, especially in pre- and para-clinical subjects such as Anatomy, Physiology, Biochemistry, Pharmacology, Forensic Medicine and Community Medicine. Sufficient incentives should be provided for motivating candidates to pursue postgraduate studies in pre- and para-clinical subjects. Non-medical courses should be started for pre- and para-clinical specialties to meet

the future requirements of doctors.

For increasing the number of doctors in disciplines related to the National Health Programmes, about 466 postgraduate seats for Ophthalmology, Anaesthesia, Paediatrics, Psychiatry, Gynaecology and Obstetrics are required.

For increasing the availability of specialist skills at the district and secondary hospitals, postgraduates in Paediatrics, Gynaecology/Obstetrics, Anaesthesia, Ophthalmology, General Medicine, General Surgery, Psychiatry and Skin and VD be posted at district-level hospitals for 6 months during the third year of postgraduation. This will not only enhance the skills of postgraduate doctors but also help in providing patient care in district-level hospitals which are short of staff.

Establish 6 Schools of Public Health to serve as Centres of Excellence for Training in Public Health in addition to strengthening PSM Departments of Medical Colleges and existing institutions such as the All India Institute of Public Health and Hygiene, National Institute of Epidemiology, National Institute of Health and Family Welfare, etc. The PSM departments in medical colleges need a thorough revamping with options to have schools of public health established for imparting public health training to the students.

Constitution of a High-level Task Force

To examine the various aspects of the deteriorating work environment in medical colleges and nursing schools, it is recommended that a Task Force be constituted. The Task Force will need to comprehensively address issues related to service conditions, payment systems, particularly for specialists, and incentives for improving quality of training and research. Further, Central assistance to states should be made conditional to states instituting HRD policies consisting of transparency in recruitment, pre- and inservice training for professional growth, transfers, promotions and delegation of authority, and in scarce areas, flexibility to extend the retirement age. Infact given the nature of this sector, there should be flexibility in retirement rules for faculty members in scarce specialties, as it takes long to acquire such skills. These steps could vastly improve the overall functioning of the system.

2. Expand use of information technology in health management and medial care

There are four areas for expanding the use of information technology in medicare: (i) telemedicine-our study shows huge direct and indirect savings on account of use of telemedicine. (ii) Computers for patient record-keeping, inventory control and monitoring, data collection and reporting in all facilities, pharmacy shops etc. (iii) Edusat facilities for training-this satellite link up could yield substantial savings for training (iv) GIS mapping of all facilities and restructuring the location of health facilities as per need and functional utility.

3. Telehealth in public information

To counter the distance factor (a major barrier in access to health care and health information) and bridge this time divide, it is

recommended that public policy encourage establishing call centres to provide health information, advice to treat minor ailments, etc. Such a step is extremely cost-saving in terms of direct and indirect costs.

SECTION IV

Financing the way forward – Issues and challenges



Financing the Way Forward — Issues and challenges

Fiscal pressures have resulted in the compression of State expenditures and the steady decline in social expenditures. The combined expenditure of States in the 1990s on medical, health, sanitation, water supply and family welfare declined from 8.4% of total expenditure to 7.2% in 2001-2002. As a proportion of GSDP, the decline was from 1.5 per cent to 1.3 per cent during this period. In this scenario, achieving MDG goals and the Tenth Plan objectives in India will be possible only if there is a significant increase in resources, targeting areas and population groups with low health indicators and focussing on the upgradation of the health system through a well sequenced process of reform. However, such increases in funds will also have to be based on community based operational research to provide evidence of the cost effectiveness of different inputs and interventions being implemented under different programs.

Our estimates indicate that public investment for provisioning of public goods and primary and secondary services alone will require about Rs. 74,000 crores or 2.2% of GDP at current government prices. When added to the current level of 0.9%, the total public health spending (ie expenditures incurred by the health departments at central and state level) in proportion to GDP the amount required will be about 3%. Such spending will bring down the household expenditures by over 50% and entail substantial health gains.

The projected public investment of Rs.74,000 crore¹ (see Annexure X) consists of an estimated Rs. 34,000 crores for capital investment required for building up the battered health infrastructure; and Rs. 9,000 crores towards premium subsidy for the poor under a mandatory Universal Social Health Insurance program covering the entire country over the next 10-15 years; and an estimated Rs. 41,000 crores for recurring costs towards, salaries, drugs, training, research etc. as detailed (Table 4.1):

The above table represents the minimum level of public investment that needs to be made. Our estimates show that the actual amounts required for providing a package of essential health interventions consisting, of medical treatment and public health interventions to all in need of primary and secondary care including both preventive and curative services, is about Rs.101,000 crore² as indicated in the Table 4.2.

Intersectorality of health

It has been argued all through this report that the mere increases in health spending will not yield commensurate results unless an equal level of investments are made in the sectors that have a defining impact on health outcomes, namely, employment and income, water, sanitation, nutrition, primary schooling and road connectivity. We see poverty alleviation and the assurance of full employment and a minimum threshold of income as a critical prerequisite to health. While the Commission takes note of the initiative taken to provide employment security under the Employment Guarantee Scheme, we feel such policies should be complemented with other measures that are aimed at protecting labour intensive sectors through various set of instru-

1 • The estimates are to be taken as indicative as actual costs could vary on account of various reasons. These could also be underestimates as they are based on very modest assumptions which may not be reflecting the true picture. For example, the drug prices are adopted from that finalized by the Government procurement agency in Tamil Nadu. Private market prices will be atleast 30-40% more.

2 • This figure assumes all those who need treatment availing of the services. In reality a majority do self care, or go to higher facilities or opt for treatment under Indian Systems of Medicine, or simply stay away for want of money.

Table 4.1**Approximate Additional Requirement of Public Investment for Health — Rs in crores**

Category	Total Estimated Amt required*	Capital	Revenue. /year	% of Revenue	Time period
Health Promotion	4,000	-	4,000	10	Every year
Regulatory Systems	1,332	443	889	2	-do-
Human Resources for Health	9,936	7796	2139	5	Over Medium to Long term till self reliance reached
Training	1,618	853	765	3	Every year but spread out
R&D	4,000	750	3,250	8	Every year
Delivery of Services	44927.78	23968.92	20958.86	50	Capital Investment till 2012, rest every year
Social Insurance for secondary care and till then for upgradation and strengthening of secondary hospitals	9003.38	-	9003.38	22	Will take 10-20 years to reach universal insurance. Smaller amounts every year
Total	74817.16	33810.9	41005.68	100	

* All estimates have been rounded off.

Table 4.2**Total Estimated Expenditure for Primary & Secondary Care Covering 17 Diseases/ Conditions Identified by the NCMH — Current Prices/ Rs in crores***

Package	Amount Required	Current level of Estimated Public Expenditure - 2004-05	Additional Public Expenditure Required	Suggested Share of Household Expenditures
Primary Care - Inpatient and out patient care for 70% population	38,000	14,750	18,900	7,000 (50% drugs by all and full cost by APL families)
Secondary Care (through SHI) and till it takes root for providing financial support to the poor and upgradation of secondary hospital network.	63,000	5,260	15,000 (towards premium subsidy and administration of institutions)	21,000 (30% premium and rest by insurance)
Total	1,01,000	20,010 (19%)	33,900 (33%)	28,000 (27%) & rest by insurance
In terms of % of the GDP (Rs 31 lakh crore)	3.3	0.64	1.09	0.90

* All estimated costs are as per government prices, which include total system costs, drugs etc. as calculated as per caseload and treatment protocols. If procured in private hospitals, a minimum additional 30% would need to be added.

ments such as for example, higher taxes on labour displacing technologies; incentives for employment intensive sectors such as weaving; mandating minimum wages by linking them with the Consumer Price Index, etc.

In addition to incomes, of equal importance is achieving the milestones for universal access to water, sanitation, nutri-

tion, basic education etc. Since availability of these goods in synergy with health is what optimizes health outcomes, an analysis of the expenditure requirement for meeting these goals was undertaken. Aspects related to quantifying the resource gap at the State-level, the resource capacity available with States to meet this gap through the reallocation of non-committed resources and raising additional resources, and the amounts required by way of Central transfers was analysed for 15 major states which showed that states having low social development are also resource poor, requiring a substantial infusion of central assistance.

Current expenditure levels and additional amounts required for health and related sectors

Our estimates show that health and related sectors require an additional investment to the order of over Rs 3 lakh crore for providing universal access to basic primary health care, primary schooling, water, sanitation, nutrition and road connectivity.

(1) Health sector (primary health care)

Requirements in the health sector are based on the norms laid down by the government for providing a minimum level of access to primary health care namely, Sub-Centres (SCs), Primary Healthcare Centres (PHCs) and Community Health Centres (CHCs). Based on these criteria, calculations show an additional requirement of about Rs 26,439 crore at 2005-06 prices in these states. However, as is known, besides, physical infrastructure and manpower costs, health service delivery also need expenditures on drugs, equipment and other items. If these are added, the actual investment needs would be about Rs 38,000 crore. (This amount is arrived at by calculating the unit cost estimations of interventions taking the cost of equip-

ment, time spent by the concerned health provider, drug and system costs etc in accordance with the treatment protocols and multiplied by the estimated caseload in a population of 100,000. Therefore this covers the entire population.) For the purpose of this analysis, the very bare minimum of physical facility and manpower as per national norms has been

Box 4.1**Norms for calculating the amounts required for bridging the gaps-Health**

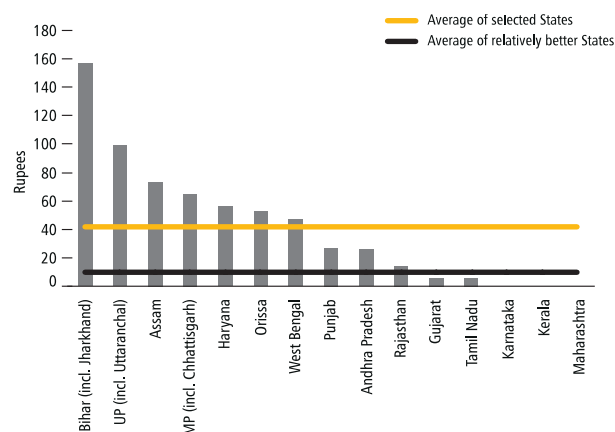
- One SC in every 5,000 population, 1 PHC in every 30,000 population and 1 CHC in every 120,000 population in plain areas. And 3,000, 20,000 and 80,000 for the respective categories in tribal areas;
- Accounted for likely increase in infrastructure between 2001-02 and 2004-05, capital expenditure on SCs, PHCs and CHCs in individual States as provided in the States' Finance Accounts ;
- Unit cost of building SCs, PHCs and CHCs was Rupees 24.5 lakhs for a PHC, Rupees 80.5 lakhs for a CHC and Rupees 2 lakhs for an SC. Also, the cost of upgrading the civil works and equipment in the existing facilities is as per data of missing gaps provided by the Facility Survey conducted by the IIPS, Mumabi, MOHFW, during 1999;
- Central government pay scales for different levels of medical personnel at SCs, PHCs and CHCs have been used;
- Population projections for the years 2005-06 to 2009-2010 provided by the Registrar General of India; data on State Finances of India published by the Reserve Bank of India; and an average inflation rate of 7 per cent has been assumed throughout the study.

adopted in the absence of state wise data on the actual amounts being spent on drugs, etc. at primary care facilities to enable working out the gap.

State wise analysis (Fig. 4.1) shows that nearly 60 per cent of this amount is needed in the two States of Uttar Pradesh and Bihar alone. In general, the five States of Bihar, Uttar Pradesh, Madhya Pradesh, West Bengal and Orissa account for around 80 per cent of this additional expenditure. As per cent of GSDP, these states require the highest increases in expenditure in the health sector, despite the relatively higher levels of expenditure (as a per cent of GSDP), reflecting an accumulated deficit and partly the low levels of GSDP in these States, reflected in the comparatively low per capita expenditures in these States. Haryana devotes the lowest amount of its GSDP towards the health sector among the selected States. As the income of West Bengal and Haryana are relatively high, as a per cent of GSDP their additional requirements are relatively low.

(2) Safe drinking water and sanitation

Calculations show that resource requirements for providing all households in the selected States with access to safe drinking water and toilet facilities by the year 2010 are an additional amount of Rs 17, 593 crore. Of these, four States Kerala, Maharashtra, West Bengal and Orissa account for more than 60 per cent of this requirement. The high requirement of Kerala may be attributed to only 20% of the households having access to safe drinking water in the State. In contrast, Tamil Nadu, Gujarat, Haryana and Andhra Pradesh do not require any additional expenditure. (Partly, the high require-

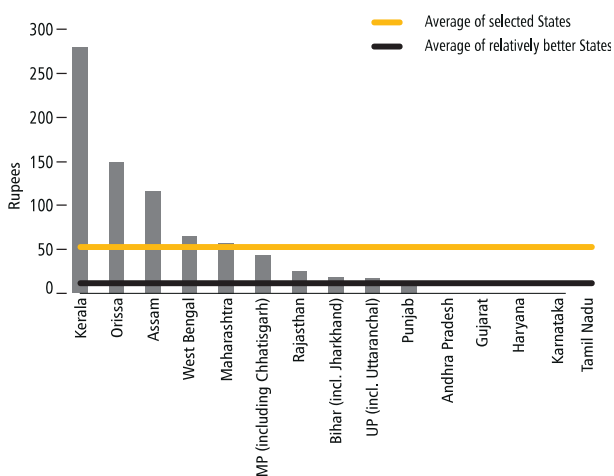
Fig 4.1**Per capita additional requirement of resources in the health sector in 2009-10**

ment in Kerala in spite of this being a high rainfall state is due to the definition of safe drinking water. A large proportion of the population in the State uses the well water, which is considered unsafe. Also, the requirement of the State is an overestimate for, the unit cost of providing safe water in Kerala would be lower due to the existence of many sweet water bodies and river systems and scale economies due to high density of population.)

As a per cent of GSDP, excluding Kerala, Assam and Orissa require the highest increase. Interestingly, Kerala and Karnataka spent the lowest amount of their GSDP in water supply and sanitation in 2001-02 among the selected States. Given the low level of spending in Kerala and the low access to safe drinking water, significant increases in expenditure, both as a per cent of GSDP and per capita are required in the State. While Karnataka also requires a significant increase in per capita terms, given its income level, the required increase as a per cent of GSDP is relatively moderate. Apart from these States, West Bengal requires a significant increase both in per capita terms as well as a per cent of GSDP (Fig. 4.2).

Box 4.2**Norms for calculating the amounts required for bridging the gaps-Water and sanitation**

- 30 per cent of the uncovered population to be covered with piped water and the remaining 70 per cent with handpumps;
- Unit cost of providing piped water was taken to be approximately Rs. 1200 per capita and that of handpumps at Rs. 140 per capita;
- Unit cost of Rs. 1000 was used for building a toilet per household.
- An additional 10 per cent of the capital cost included for maintenance of the water supply systems.

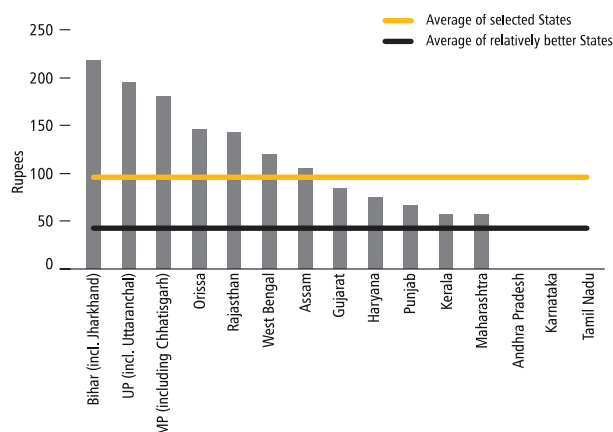
Fig 4.2**Additional requirements for water supply and sanitation, 2009-10 (Per Capita)****(3) Nutrition**

The additional resource requirements for providing nutritional supplements to all malnourished children in the age group of 6 to 71 months and all pregnant and lactating mothers below the poverty line are in the region of Rs. 56, 383 Crores. Of this, more than 50 per cent is required in the two States of Bihar and Uttar Pradesh with Uttar Pradesh alone requiring more than 30 per cent of this required expenditure. The five States of Madhya Pradesh, West Bengal and Rajasthan along with Uttar Pradesh and Bihar account for almost 80 per cent of the requirement. In contrast, Tamil Nadu and Andhra Pradesh spend a substantial amount of their GSDP on nutrition and therefore do not need any additional expenditure.

As per cent of GSDP, Bihar, Uttar Pradesh, Madhya Pradesh, Orissa and Rajasthan occupy the top five positions in terms of requirement. Kerala, Maharashtra, Punjab and Haryana require an increase of less than 0.2 per cent of GSDP. (Figure 4.3)

Box 4.3**Govt. of India Norms for calculating the amounts required for bridging the gaps-Nutrition**

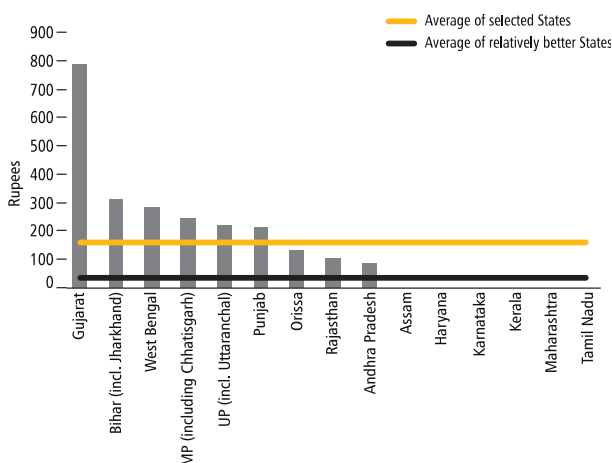
- Unit cost of Rs.3.1 per child per day for providing nutritional supplements to children in the age group of 6 to 71 months under the ICDS scheme;
- Unit cost of Rs. 3.81 per child per day for the severely malnourished children is Rs. 3.81 per child per day;
- Rs. 3.41 per beneficiary per day for pregnant and lactating mothers.

Fig 4.3**Additional resource requirement for providing nutritional supplements, 2009-10****(4) Primary schooling**

Estimated needs of funds for universal primary schooling in the age group of 5 to 14 in the selected States indicate a requirement of Rs 106,008 crore. Universalising primary education is not only important for achieving health outcomes, but has various other positive externalities. Of these again the deficit states are Bihar, Uttar Pradesh and Gujarat. The high requirement of Gujarat may be attributed to the fall in the number of primary schools in the State between 1993 and 2002 Apart from these States, Madhya Pradesh and West Bengal call for a substantial increase in expenditure. In general, the five States of Bihar, Uttar Pradesh, Gujarat, Madhya Pradesh and West Bengal account for more than 90 per cent of the requirement. On the other hand, Tamil Nadu, Karnataka, Kerala and Maharashtra do not require any additional expenditure. However, even in these States all children are not in school and therefore one might need to identify the possible reasons for why these children has remained out of school and spend on appropriate heads required to bring these children to school. (Figure 4.4)

Box 4.4**Norms for calculating the amounts required for bridging the gaps-Primary Schooling**

- The capital cost for universalising elementary education based on the report of the "Expert Group on Financial Requirements for Making Elementary Education a Fundamental Right" (1999);
- The estimates modified to accommodate for the number of schools built between 1993 and 2002 (based on the Sixth and Seventh School Education Survey);
- Rs 800 per capita revenue expenditure requirement adopted based on an estimate of an average expenditure per child in primary school provided by the Ministry of Education.

Fig 4.4**Additional resource requirement for primary schooling, 2009-10****(5) Roads**

The cost of connecting all habitations in the selected States by roads is based on information provided by Prime Minister's Gram Sadak Yojana (PMGSY). As in the case of primary schooling, expenditure on roads has a positive impact on health outcomes but also entails other positive externalities. Deaths of an estimated 8 to 10% of maternal deaths can be averted with access to all weather roads. For all selected States taken together, a sum of about Rs. 93,765 crores is required for connecting all habitations by roads. While in absolute terms, the five States of Bihar, Uttar Pradesh, Madhya Pradesh, West Bengal and Orissa account for two-thirds of the total requirement of resources, as a per cent of GSDP, the States of Orissa, Assam, Bihar and Madhya Pradesh require significant increases. (Figure 4.5)

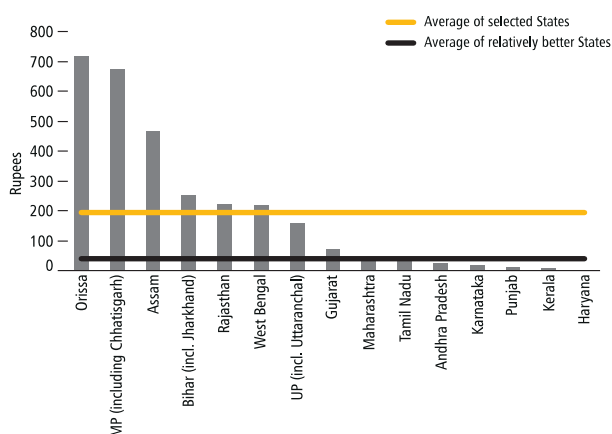
Fig 4.5**Additional resource requirement for construction of roads, 2009-10**

Table 4.3 shows the total additional requirement of resources in different sectors between the period 2005-06 and 2009-2010. For health, water, sanitation and nutrition alone, a total of Rs. 1,00,415 Crores is required over the next five years. If one adds up expenditure for primary schooling and roads, the requirements are almost tripled. The total combined requirements of all sectors are of the order of Rs 3,00,188 crore.

The three States of Bihar, Uttar Pradesh and Madhya Pradesh account for more than 50 per cent of the additional requirement of resources. Even if one focuses only on health, water, sanitation and nutrition, Bihar, Uttar Pradesh and Madhya Pradesh occupy the top positions. These States therefore require special attention. If one focuses on the low income States of Assam, Bihar, Orissa M.P. and U.P alone, the requirements are of the order of Rs. 1,99,730 Crores. Even with a narrow focus on health, water, sanitation and nutrition in these States, the requirements are about Rs. 70,000 Crore.

It is interesting to note that the additional expenditure requirements are particularly high in States with low per capita GSDP. This is reflected in Figure 4.6 which indicates the association of the additional per capita expenditure requirements in the year 2009-2010 with current (2002-03) per capita income of States. Low income States are also the ones with high poverty (the correlation of per capita income with poverty in States is more than 0.8). Thus, in general, lower the income level of a State, higher is the State's requirement of expenditure for health outcomes. This point underlines the importance of expenditures on anti-poverty programmes including employment creation and income generation activities particularly in states with large concentration of poverty.

The additional requirement estimated in this section has to be met either with additional mobilisation of resources at the State-level or through Central transfers.

Fig 4.6**Per capita additional resource requirement and per capita income of the States**

Note: The requirements for Gujarat are affected by problems in data on schooling

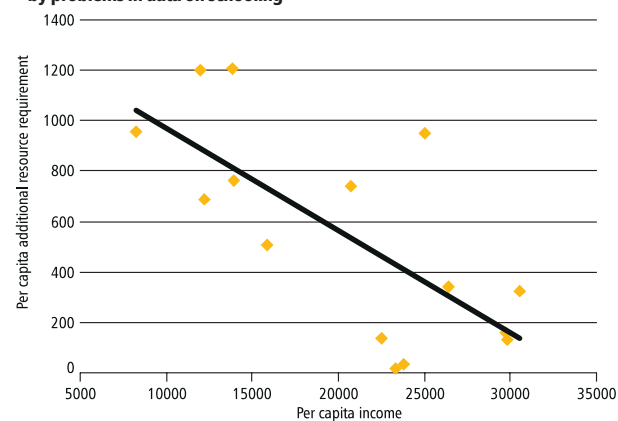
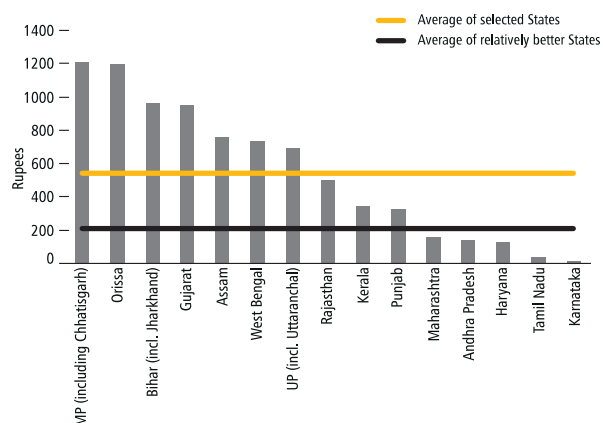


Fig 4.7**State-wise total per capita additional requirement of resources, 2009-10****Resource mobilisation by States**

To identify the extent to which additional resources for health related expenditures can be mobilised at the State-level two possibilities have been explored: a) reprioritisation and reallocation of the States' existing resources towards health; and b) generation of additional revenues.

(a) Reallocation of resources

The Twelfth Finance Commission estimates provide a benchmark for states related to the committed expenditures in reference to pensions and interest payments. The States have been asked to

reach the desired ratio of salary expenditure to revenue expenditure at 1996-97 levels by (a) reducing the number of employees, (b) reducing the average per employee salary or (c) increasing the revenue receipts without increasing the revenue deficit. In this context, it would be advisable for the Central Government to issue strict guidelines to States to ensure that such reduction in the wages and salaries expenditure should happen in administrative departments and not in the education and health sectors. In fact, in the latter, it is important to ensure that health facilities are staffed in accordance with the minimum quality norms for assuring appropriate patient care and desirable health outcomes.

Table 4.4 shows that many States over the next five years will spend a large portion of their revenues for meeting the committed expenses on wages and salaries, interest payments and pensions, leaving very little for discretionary expenditure. (Projections of total revenues in States were based on the past growth rate of revenues between the period 1993-94 and 2002-03 based on data provided by the TFC.) Particularly severe is the position in the states of Assam, Orissa, Bihar, Punjab and West Bengal, which are unlikely to have any resources available for discretionary expenditures in the next five years. In five of the remaining ten States, committed expenditures will use up more than 80% of their resources.

Of the discretionary resources available, not more than 5% can be expected to be reallocated from other sectors for health and related sectors during the period 2005-06 to 2009-2010 (Table 4.5). The additional resources so reallocated is an estimated Rs. 14,755 crores at 2005-2006 prices.

(b) Generation of additional revenues

Given the tight resource position, an examination of the states' potential for generating additional tax revenues to create

Table 4.3**Additional resource requirements for 15 Major States for the period 2005-06 and 2009-2010 (Rs. Crores) at 2005-06 prices**

	I			Total	II		Total	Total
	Health Sector	Water and sanitation	Nutrition	(I)	Primary schooling	Roads	(II)	(I + II)
Andhra Pradesh	944	0	0	944	4338	873	5211	6155
Assam	976	1349	1379	3704	11	6061	6072	9776
Bihar (incl. Jharkhand)	7150	897	11204	19251	18782	12902	31684	50935
Gujarat	634	0	1979	2613	23037	1714	24751	27364
Haryana	554	0	736	1290	54	0	54	1344
Karnataka	10	415	703	1128	0	489	489	1617
Kerala	0	3532	910	4442	0	77	77	4519
MP (including Chhattisgarh)	2983	1842	7365	12190	11963	27419	39382	51572
Maharashtra	223	2455	2471	5149	0	2063	2063	7212
Orissa	1210	2336	2478	6024	3006	12065	15071	21095
Punjab	405	175	775	1355	2956	166	3122	4477
Rajasthan	990	300	3876	5166	4321	6085	10406	15572
Tamil Nadu	612	0	0	612	0	855	855	1467
UP (incl. Uttaranchal)	8463	1834	17814	28111	23728	14513	38241	66352
West Bengal	1286	2459	4693	8438	13811	8485	22296	30734
Total	26439	17593	56383	100415	106008	93765	199773	300188

Table 4.4**Committed expenditures as per cent of total revenues in States between the period 2005-06 and 2009-10**

States	2005-06	2006-07	2007-08	2008-09	2009-10
Andhra Pradesh	70.38	68.50	66.69	64.95	63.27
Assam	105.58	108.01	110.54	113.17	115.90
Bihar (old)	101.69	101.25	100.86	100.49	100.16
Gujarat	46.41	45.29	44.21	43.17	42.15
Haryana	79.28	79.75	80.11	80.43	80.72
Karnataka	71.17	70.87	70.59	70.32	70.06
Kerala	96.36	95.63	94.92	94.23	93.56
Madhya Pradesh (old)	76.37	77.75	79.22	80.78	82.44
Maharashtra	92.80	94.08	95.44	96.87	98.38
Orissa	105.26	104.97	104.76	104.62	104.54
Punjab	117.02	117.60	118.33	119.21	120.25
Rajasthan	95.79	95.90	96.09	96.36	96.69
Tamil Nadu	83.15	82.93	82.72	82.53	82.34
Uttar Pradesh (old)	86.64	85.41	84.25	83.13	82.07
West Bengal	138.88	139.17	139.60	140.18	140.91

Table 4.5**State-wise 5% of discretionary resources that can be reallocated to health and related sectors**

States	Percentage of the GSDP				
	2005-06	2006-07	2007-08	2008-09	2009-10
Andhra Pradesh	0.20	0.22	0.23	0.25	0.27
Assam	0	0	0	0	0
Bihar (old)	0	0	0	0	0
Gujarat	0.37	0.37	0.38	0.38	0.38
Haryana	0.13	0.13	0.13	0.13	0.13
Karnataka	0.18	0.18	0.18	0.18	0.18
Kerala	0.02	0.03	0.03	0.04	0.04
Madhya Pradesh (old)	0.20	0.18	0.17	0.16	0.14
Maharashtra	0.04	0.03	0.02	0.02	0.01
Orissa	0	0	0	0	0
Punjab	0	0	0	0	0
Rajasthan	0.03	0.03	0.03	0.02	0.02
Tamil Nadu	0.12	0.12	0.11	0.11	0.11
Uttar Pradesh (old)	0.10	0.11	0.12	0.12	0.13
West Bengal	0	0	0	0	0

Note: Projections of GSDP have been made using the prescriptive growth rates suggested by the Twelfth Finance Commission

fiscal space for financing incremental expenditures in the health sector was undertaken. Based on various studies of the measurement of taxable capacity (see Annexure XI), it is estimated that states have potential to generate an additional Rs. 2,40,035 crores (2005-06 prices) over the next five years. Of this about Rs. 60,000 crores or 25% should be allocated during the period 2005-10 towards health and related sectors. Just the six states of MP, UP, WB, Orissa, Assam and Bihar require Rs. 67,805 crores.

Since the above mentioned states not only have a high requirement of health expenditures, but also a relatively low capability of generating additional revenues accounting for the high deficit, the Twelfth Finance Commission (TFC) provided additional grants for health and education expenditures specifically to the states of Assam, Bihar, Jharkhand, Madhya Pradesh, Orissa, Uttar Pradesh and Uttaranchal to equalise the health expenditures within the special and non-special category States. The total grant under these two heads at 2005-06 prices is about Rs. 13,927 Crores.

The conditions for accessing the TFC grants are tight. But assuming that they can be surmounted and the grants accessed, there still would be a substantial deficit in the requirement of resources for meeting health goals.

Table 4.6 depicts the amounts that can be mobilized through the 5% reallocation from discretionary grants, 25% from additional resources mobilization, and the amounts awarded under the TFC for health against the amounts required by the states for health, water, sanitation and nutrition. As can be seen there are 9 states that would still require an estimated amount of Rs 20,800 crore for bridging their deficit calling for support through central transfers.

Central transfers to States

Central transfers to states are through the mechanism of statutory transfers comprising of tax devolution and grants given on the basis of the recommendations of the Finance Commission; plan assistance given by the Planning Commission on the basis of the consensus formula approved by the National Development Council (NDC); and under the centrally sponsored schemes. Analytically, these transfers help states to offset the general fiscal disabilities and enable every state to provide a given minimum standards of specified services at a given tax price. These are formula based transfers meant for general augmentation of resources and can not be pre-empted for spending on health and allied sectors, except in the case of the upgradation grants for health and education as recommended by the TFC.

Within these set of constraints, as a starter, we recommend two steps to improve the quality of spending of central resources: 1) Consolidation of the large number of schemes being administered by various ministries resulting in the thin spread of resources, multiplication of bureaucracy and poor targeting under the broad heads of basic education, healthcare, mother and child, nutri-

Table 4.6**An Estimate of Resources that the states have the potential to Mobilize, the estimated State-wise Resource Gaps, and Additional Resources Required**

	Total Requirement (Rs. Crores)	Resources that can be allocated towards health through 5 % reallocation (Rs. Crores)	Total Additional resource generation (Rs. Crores)	25% Resources that can be allocated towards health from additional resource generation (Rs. Crores)	Total Resources for health	Twelfth Finance Commission Transfer (Rs. Crores)	Deficit against requirement (Rs. Crores)
	I	II	III	IV	(III+IV)	VI	V+VI-I
Andhra Pradesh	944	3100	13333	3333.25	6433.25	0	-
Assam	3704	0	4630	1157.5	1157.5	829	-1717.5
Bihar (incl. Jharkhand)	19251	0	14268	3567	3567	1881	-13803
Gujarat	2613	3739	9821	2455.25	6194.25	0	-
Haryana	1290	643	7585	1896.25	2539.25	0	-
Karnataka	1128	1759	21201	5300.25	6428.25	0	-
Kerala	4442	204	13809	3452.25	3656.25	0	-785.75
MP (including Chhattisgarh)	12190	1425	22844	5711	7305	169	-4885
Maharashtra	5149	511	24114	6028.5	6539.5	0	-
Orissa	6024	0	6286	1571.5	1734.5	163	-4289.5
Punjab	1355	0	10540	2635	2635	0	-
Rajasthan	5166	179	12303	3075.75	3254.75	0	-1911.25
Tamil Nadu	612	1308	18829	4707.25	6015.25	0	-
UP (incl. Uttaranchal)	28111	1887	32277	8069.25	9956.25	2068	-18154.75
West Bengal	8438	0	28193	7048.25	7048.25	0	-1389.75
Total	100415	14755	240035	60,009	77464.25	5110	-20840.75

tion, water supply and sanitation and rural roads for better targeting and efficiencies by reducing duplication; and (2) Target the expenditures to states and regions where the health indicators are poor and incorporate incentives and mechanisms to ensure that these additional resources provided by the Centre are used for incremental spending and not to substitute States' own spending or for meeting their own ways and means position. Such a measure of equalization can be achieved by mandating the States to make matching contributions, based on the level of per capita incomes in the States for Central transfers, with high income states contributing a higher proportion as compared to the middle and the low income States. However all these measures though useful as supplements are grossly inadequate to meet the requirements for achieving the stated goals.

Achieving health goals

For achieving MDGs or the goals and aspirations laid down in various Plan documents and policy statements, we estimate that over the next few years, spending on health and health-related sectors should be aimed towards increasing social sector spending by 7% of the GDP, from the current level of 2.69% to 9.7% (Table 4.7).

As can be seen in the Table above, what is needed is a quantum jump in social sector spending as an investment in human development. Given the Center's own limitations in

increasing resource transfers to states, mobilizing the additional resources as indicated above would require adoption of a comprehensive approach rather than making incremental increases to the annual plans year after every year. Such an approach may consist of the following measures :

- Mobilizing 1 to 2% GDP from general taxation to be directed to health and related sectors over the next few years. Given that the proportion of tax revenues to GDP went up by only 0.87 percentage points during the period 2001-02-2004-05, it would be advisable to constitute a Task Force to assess the sources and the time frame by when the additional resources can be mobilized. Such an effort will also be consistent with the commitment made in the Common Minimum Program which explicitly stated an increase of public spending by 2-3% of GDP within five years.
- Implementing the Twelfth Finance Commission (TFC) recommendations related to debt rescheduling, reduction in interest rates and the incentive based debt write off to the tune of Rs. 32,198 Crore over the same period when the States reduce their revenue deficits and also ensuring that the additional fiscal space created by the implementation of such measures is used for health and health related sectors. The TFC has also suggested other measures for improving the fiscal health of the states such as debt rescheduling/debt swapping of high cost debt incurred on account of small savings loans with the market borrowing at lower rates of

Table 4.7**Minimal Amounts Required to be Spent on Health Related Sectors / Rs in crore**

Categories	Past Spending	As % of GDP	Current Spending	As % of Rev. Exp	Additional Exp Required		Aggregate Amount	
Year	2001-02		2004-05		(Amount)	(As % GDP)	(Amount)	(As % GDP)
Health & Fmly Welf.	23758.85	1.05	29105.61	0.94	38000.00	1.22	61758.85	1.99
Elem.Education	32481	1.43	39791.19	1.28	106008.00	3.41	138489.46	4.46
W. Supply & Sanitation	10377	0.46	12712.27	0.41	17593.00	0.57	27970.00	0.90
Nutrition	2288	0.10	2802.41	0.09	56383.00	1.81	58670.60	1.89
Total of Above	68905	3.03	84411.48	2.72	217984.00	7.01	286888.91	9.23

Source: i) State Finance Accounts, various issues, RBI, India
ii) Demand for Grants, Budget Accounts of Central Government, Various Issues
iii) The Above Includes Capital and Revenue Expenditure
iv) The Estimate for year 2001-02 is actuals while for the period 2004-05 it is an estimate adjusted for 2004-05 prices
v) Total amount is estimated by adding additional expenditure required and estimates for 2004-05 (estimate for 2004-05 is met amount obtained by the difference between 2001-02 and 2004-05).

interest, the structural and parametric changes on pensions etc. - measures of particular importance for Bihar, Himachal Pradesh, Kerala, Orissa, Punjab, Rajasthan, Uttar Pradesh and West Bengal for a discernible improvement in the situation.

- Mobilize additional resources at the State level by improving efficiencies in tax administration, as well as, broadening the tax base for raising more resources. There is a possibility of raising revenues, particularly in some states where the actual revenues raised is below their capacity, though such capacity estimation itself is relative to other States. For example, although the States have been assigned the power to levy tax on agricultural income and wealth, they have, mainly for political reasons desisted from this and even the land revenue collections have declined over the years. With political consensus, raising the bar for these measures is possible.
- Implementing the equalization principle. By targeting central allocation to the 9 states that need an additional infusion of Rs 20,800 crore, from the Central Government.
- Strategic mobilization of external funding to bridge resource gaps and with focus on the low performing states: for (1) capital investment, (2) long-term training for development of requisite skills, (3) building institutional capacity for delivery of services and (4) research and (5) overall health system strengthening, etc. A thorough review of donor funding for health is called for to reset the priorities of lending along these lines to be utilized towards developing the needed health infrastructure and not for low cost solutions or routine operational expenditures, which can be met from domestic revenues. The current system of picking program segments by donors need also to be reviewed by keeping a strict focus on the outcomes of the interventions and investments proposed. This source of funding needs to be doubled from the current level of 2% of total health spending to at least 5% which will yield about Rs 5000 crore per year. Further there is a need to modify central policies to enable quicker release of funds as per agreed allocations and on more favourable terms to states. This is yet another issue that the proposed Task Force needs to examine so that such external funds on concessional terms can help bridge the resource gap in the

short term till domestic resource position improves.

- As suggested in the Way Forward, improving efficiencies in the organizational structure of the health delivery system, a point equally relevant for other social sector departments as well. Just the mere relocation of the health facilities and norm based governance can bring in efficiency savings of at least 30%. In fact by filling input gaps, utilization can be doubled in the short term and bring some relief to poor households.
- Through strategic investments and changes in financial structures and procedures, improve the absorption capacity and optimize utilization of existing funds which again will have an impact on reduced disease burden and reduction in household expenses;

From the above, it is clear that significant additional allocation to health and related sectors is within the realm of possibility. In fact what has been estimated here for is the bare minimum. In the health sector alone, additional funding is required just to provide the rudimentary requirements of primary care and similarly under Nutrition provisioning of funds has been calculated at Rs 3 per capita, an abysmally low amount, bordering on tokenism, given the magnitude of malnutrition in this country. Not only mobilizing resources but also revising norms to reasonable levels is urgently required to be undertaken for achieving the minimum standards of well being. States too will have to exercise prudent fiscal management and govern well, so that additional funding from the Central Government is not construed to subsidize inefficiency.

Conclusion

Investing in human capital is critical to both accelerating growth, enhancing productivity and empowering the poor. Improving the health status of the population is a prerequisite for economic development and States will have to reassign their priorities in favour of the health sector in the interest of spurring growth and development. Achieving such a national consensus will be the key challenge to the political system in the future years.

SECTION V

Conclusions and recommendations



Conclusions and recommendations

Section I

1. Investing in health

EVIDENCE SHOWS THAT INVESTMENT IN HEALTH CAN AND DOES CONTRIBUTE TO economic growth. Healthier persons live longer, are more productive, earn and also save more. Analysis shows disparities in health with an 18-year difference in the life expectancy at birth between 72 years (in Kerala) to 58 (in MP); the probability of the poor falling sick by 2.3 times more than the rich; and a Rs 1000 increase in the per capita income increasing the LEB by 3 years. The challenges for the future are malnutrition, an ageing population, and an increased disease burden on account of new infections and emergence of an epidemic of non-communicable disease, that, in the absence of social security systems, have the potential to impoverish the poor. An estimated 3.3% of the population is estimated to be getting pushed below poverty line on account of medical treatment. Therefore investing in health is investing in economic development and equitable growth.

- Increase investment in a basket of goods consisting of strategies for poverty alleviation, health, nutrition, more particularly micronutrients through production incentives, affordable prices and promoting R&D to produce fortified foods; safe drinking water and sanitation; rural road network; and female education.

II. Disease burden in India

India is reeling under a dual burden of disease with unacceptably high levels of communicable and infectious diseases, diseases/conditions related to reproductive health, and an emergence of chronic and non-communicable diseases. Based on an exhaustive literature review of 17 diseases/conditions, the disease burden projections for 2015 show a grim picture of a large number of persons with cardiovascular diseases, HIV infection, psychiatric illnesses, etc. Projections also show that India will not be able to achieve the MDG goals of IMR, Under-5 MR and MMR and that the non-communicable diseases which are also more expensive to treat affect the poor too. An exhaustive causal analysis however clearly demonstrates the efficacy of preventive and low-cost solutions to avert disease and death., making a strong case for shifting priority for public investment to focus on prevention of disease and promoting good health values such as exercise, healthy diet, no smoking or excessive consumption of alcohol, responsible sexual behaviour etc.

- Undertake community-based research to arrive at more credible estimates of disease burden
- Invest on developing public health expertise and the requisite skills to undertake disease estimation studies and projections.
- Increase spending on health promotion—at least 10%–20% of the public sector budget to be earmarked for public health activities such as health information dissemination and education on preventing disease and promoting good health values, allopathy as well as ayush systems such as yoga, ayurveda etc. etc. with the participation of communities, local bodies, NGOs and members of civil society, professional bodies, etc. and by propagating the existing traditional knowledge like yoga that are known to reduce stress, treat chronic ailments like arthritis and improve well being.

Section II

1. Delivery of care in public and private sector

Mismatch in goals and strategies and management failure at various levels of decision making and implementation are reasons for the poor performance of public health systems and India's inability to achieve the goals laid down in the various policy documents. There is an urgent need to shift towards more evidence-based policy-making, decentralization of functions to hospital units and local bodies, shifting the role of States to manage the health system away from the narrow focus on the implementation of budgeted programmes and vertical schemes and develop systems that address the health needs of the poor in particular in a comprehensive manner.

- The growth of the private sector has been phenomenal due largely to the dysfunctional nature of the public health system. But the private sector has by and large failed to provide quality care at a reasonable cost. The qualified provider markets in the private sector are urban-based, technology and specialist driven and consequently expensive and unaffordable to the majority of the people, who take recourse to the local quack-RMP-receiving care of dubious quality.

Besides, to address the failures so characteristic of health markets world over, such as induced demand, there is need to bring in provider regulations to contain costs; incentivise providers to desist from irrational prescription practices etc. which contribute to increasing cost.

- To reduce government expenditures by at least 30%, an exercise for rationalizing and restructuring the Public Health Delivery System at the primary health care level should be taken up. By aligning the finances, functions and functionaries with the services to be provided at each of the facilities, efficiencies can be improved. For this, mapping of all facilities should be undertaken, and facilities relocated based on workload norms, community preferences, and distance norms, for example access to the first contact for care within 30 minutes; inpatient care within 60 minutes; an EmOC facility within 2 hours; and a specialist in 2-4 hours, etc.
- Improve efficiencies of public facilities by having utilization norms such as 40 OP per doctor in a PHC/CHC and 75% occupancy rate for IP care, etc. Integrate CHC as the health administrative unit and gatekeeper for referrals to higher facilities and have the PHC focus on health promotion, emergency care and women's health; and professionalize the management of public facilities by having trained hospital managers. This will also relieve the clinicians to attend to work s/he are trained for : patient care.
- Formulate Public Health Laws for the range of issues in the health sector- legislation for location, establishment and conducting of health care provisioning; on medical ethics and professional qualifications, prescription practices, drug pricing, quality, availability and pricing of services, use of technology, and advertising / the consumption of products that adversely affect health such as tobacco, alcohol, fast foods, unhealthy products through the media and against increasing vehicular pollution, etc.

- Professionalize health management and administration: Currently, both at the Central and State levels, institutional mechanisms to keep pace with new demands generated by a rapidly changed circumstance-dominant presence of private players in all aspects of health; new financing systems; more aware and demanding consumers, technological advances and information explosion, etc.-require the health management and administration to be suitably upgraded and professionalized. Appropriate institutions need to be established to cope with these new demands and better skilled and informed managers are required at all levels. For this, it is recommended that by an Act of Parliament or whatever considered adequate/appropriate to assure the required level of autonomy and stature, the following institutions be established:

1) Federal Drug Authority; 2) Indian Medical Devices and Technology Authority; 3) National Commission for Quality Assurance; 4) National Commission for Medical and Health Education; and 5) Hospital Financing Corporation.

- Strengthen the mechanisms for enforcement of laws related to quality assurance, disease surveillance and public health measures, quality of education, and drug and food safety.

2. Three drivers of the health system costs — Human Resources, Drugs and Medicines, and Technology

Human resources

The biggest impediment in India's ability to achieve health goals will be human resources, both in terms of availability as well as expertise. There are a few health economists and a grossly inadequate number of biostatisticians for a country of this size. Besides even the current availability of human resources (doctors, nurses, midwives) fall short of the international norm of 2.5 per 1000 population. There is a shortage of doctors in specialties that are required for addressing our disease burden viz. anaesthetists, ophthalmologists, gynecologists, etc. and in disciplines such as Anatomy, Physiology, etc.-basic disciplines that are needed in medical colleges. Lack of teaching faculty will be the main impediment in expanding and opening more colleges. There is an increasing shortage of well-trained skilled nurses and other paramedical resources such as pharmacists, laboratory technicians, etc. There is concern of the low quality of instruction and skill acquisition, more particularly in private medical colleges, and neglect of community medicine. Equal attention also needs to be paid to involve the community and train a community based cadre of health providers. Training the existing rural medical practitioners who enjoy a measure of social consent over three years, could have the twin benefits of addressing over 80% of health care needs within the village habitation itself and also at the same time relieve the pressure on the production of trained medical doctors who, by virtue of their training and professional aspirations are reluctant to serve rural villages. These RMP's can be trained in district hospitals having more than 100 beds and having a good occupancy rate.

- To meet the growing demand for physicians, both within and outside the country, it is necessary, to increase the number of medical colleges and nursing schools. However, priority should be given to reducing the existing inequity by establishing 60 medical colleges in the deficit states of UP, MP, Bihar, etc.
- Establish 6 Schools of Public Health are also required besides upgrading those in the country – public or private.
- Likewise an additional estimated 3.25 lakh nurses would be required by 2015, excluding the demand from the western countries : USA alone is reportedly in need of an estimated 10 lakh nurses from abroad over the next decade. For this, it is necessary to establish an additional 225 nursing colleges and upgrade the existing ones to become benchmarks of excellence.
- The Medical Council of India and State Medical Councils as also the Nursing Council of India have failed to carry out the mandate provided to them for regulating the profession and raising the standards of medical education and enforcing them; it is essential that the MCI/NCI Act be amended to allow for civil society representation in the Council. Besides, the MCI should restrict itself to regulating undergraduate education with the postgraduate education being monitored separately by another body. Similar are the concerns regarding the functioning of the professional councils of the department of AYUSH as well.
- The standards of training in medical colleges, nursing schools and colleges, and in those institutions that impart training to paramedical personnel have to be improved. There is an urgent need to establish a Commission for Human Resource Development and Medical and Health Education for promoting excellence in health care and human resources for health. This Commission should be empowered to set standards of training, design courses relevant for the health needs, standardize and upgrade the curriculum and undertake the integrated planning and development of human resources in health—doctors, nurses and other paramedical personnel and a system of accreditation of training institutions. This Commission should also have a financial corpus to provide as grants/loans to institutions for helping them reach the laid down standards.
- A live register and database needs to be maintained for all categories of medical and paramedical personnel and regularly updated by the respective professional councils. A system of re-registration of doctors and nurses once every five years and linking re-registration with minimum number of hours of continuing medical education (CME) should be introduced.
- To encourage young persons to take up public health, it is recommended that an All India Cadre of Public Health be established on the lines of the IAS/IPS.
- Sufficient incentives, financial and non-financial, should be given for attracting medical teachers to join and continue in pre- and paraclinical specialties in medical colleges. In addition, non-MBBS postgraduate seats may be increased in these specialties. Teachers in medical and nursing train-

ing institutions should be provided fellowships for undertaking higher studies and provided incentives for undertaking research.

- The number of seats in specialties such as Anaesthesiology, Paediatrics, Obstetrics/Gynaecology, Psychiatry and Community Medicine should be increased. Multiskilling of MBBS doctors with 9 months post graduate certificate training at the district hospitals in the scarce speciality would enhance availability of the required skills at the community health centers and help bridge the existing void in specialist care in rural areas.
- Every state should focus on nursing for better management and development of this critical human resource for health. There is a need to formulate and implement a national strategic plan for nursing and midwifery development, as done in Bangladesh, Thailand, Indonesia, Myanmar and Sri Lanka, etc. For developing leadership skills among nurses, the government should invest in multidisciplinary leadership and management development programmes for nurses and midwives. The bottom line is to create conditions that will enable us to retain our best and most qualified nurses to serve the health needs of the country.
- Institute atleast 1000 fellowships for research and higher education in various fields of public health, nursing, medical management etc. for faculty positions in the various schools and autonomous bodies proposed. 25% of these should be earmarked for PhD and post graduate studies and be open to all – government employees, universities, research institutions etc. alike.

Integrating the AYUSH system

- Constitute an independent regulation to assess and monitor quality aspects of AYUSH practice.
- Amend the Act that defines 'medical practitioner' in the Indian Medical Council Act to the MBBS degree holders, disqualifying the 5 lakh degree holders of AYUSH systems registered under the Indian Medicine Central Council Act, 1970 and Central Council of Homeopathy Act of 1972 of the Govt. of India. Suitable changes in the IMC Act will help in expanded use of this resource.
- A coordinated programme of participatory clinical research should be launched by the ICMR, CSIR to validate the best practices in traditional systems of health care. Likewise, a coordinated approach to the documentation of ecosystem-specific remedies, of traditional foods and related knowledge, epidemiological studies on the linkages between traditional food practices and health status of selected communities, etc. needs to be put into motion quickly.
- Functional collaboration of ISM with modern medicine may be facilitated at the PHC level. To begin with in a few places pilot projects with the integrated model be implemented. Based on this experience, the model can be upscaled to cover all the PHC's. To steer the development of integrative medicine, a Central Directorate of Integrative Medicine may be instituted.
- Formulation of an integrated national approach for the

management of HIV/AIDS similar to the model in China and undertaking a systematic research on specific aspects related to HIV and the role of ISM are required.

- The promotion of ISM herbal gardens under the Gram Aushadhi Udyan Cooperative farms and Gram Aushadhi Nirman programmes must be developed in at least 10,000 villages; the village healers identified, skills assessed, enhanced and utilized in the integrative model.
- Establish a coordinating body for a single window approach to undertake clinical trials under all systems of medicine.

Access to affordable drugs

It is difficult to predict the impact of the Patent Act on the access to drugs, both in terms of price as well as availability. At the time of the writing of this report, there are various scenarios emerging, ranging from cautious optimism to down-right pessimism. Given the agreed position on the necessity to ensure that we safeguard this basic and fundamental right to access to essential medicines, there is need to carefully study experiences of other countries and coping strategies from the patients' and not only the commercial point of view. We see the Government's role to be very critical in being able to exploit the strengths and minimize the threats that are inherent in this Act.

- Expand price control of all drugs and mandate use of only generic drugs in all publicly funded programmes. Such price caps will help contain costs.
- Weed out irrational drugs and irrational combination drugs to substantially reduce household drug expenditures.
- A minimum VAT of 1% as against the proposed 4% should be levied for essential drugs
- Fix ceilings on trade margins as suggested by the interim report of the Sandhu Committee.
- Centralized pooled procurement reduce government expenditure by over 30%-50%. For this, we recommend adoption of the TNMSC model throughout the country.
- The recommendations of the Mashelkar Committee regarding setting-up of the National Drug Authority (NDA) with an autonomous status to take up the functions of drug pricing, quality, clinical trials, etc. need to be implemented without delay. Consequently, the present National Pharmaceutical Pricing Authority (NPPA) could be merged with the proposed NDA and Central Government provide assistance to states for strengthening the drug regulatory system.
- The Patent Act passed recently needs to clarify the scope of patentability; 'reasonableness' of royalty to be paid on the issuance of compulsory licensing; definition of 'significant' for the Indian companies manufacturing these drugs, mechanisms for automatic compulsory licensing and strengthening of the regulatory bodies to ensure that drug security is assured.

Access to modern technology

Modern technology has immense potential to save lives and improve the quality of life if used wisely. Due to tax exemp-

tions for import of technology and intense competition in private health markets, there is a rapid proliferation of technology, which is not regulated for quality or use. This is driving up costs of health care without any concrete evidence of good health outcomes. The public sector for various reasons is also costly and inefficient in the procurement and management of technology. Finally, information technology also needs to be more intensively used for patient care as well as health management.

- Regulate the proliferation of technology and reduce the clustering, particularly of high end technology by establishing norms and requirements of certificate of need by the public health authority, as done in most countries.
- Public sector should shift to contracting the private sector more for diagnostic services as it is more cost effective;
- Establish the Indian Medical Devices Authority and implement the recommendations of the High Level Committee constituted for the purpose by the ICMR and INSA. This committee should be outside the Ministry of Health as it requires skills that the Ministry does not have, being an end user of such technology. Necessarily the membership should consist of representation from DST, CSIR, INSA, DRDO, IT etc. .
- Introduce and intensively promote use of IT in health care for patient care in 3 areas : 1) Telemedicine, 2) computerized data management and record keeping; 3) training through the Edusat facility. For facilitating this recommendation, constitute a Working Group with representation from NASSCOM and IT department to formulate a policy for upscaling the use of IT in health. Similarly, there should be an increased use of the Geographic Information System (GIS) for facility mapping, areas of disease burden, etc. and its use as a decision-making tool for deployment of resources by expanding this expertise in the NIC which has the institutional capacity to service the requirements of health planners at the district level.

3. Financing of health

In the absence of a national health accounts system in the country, we have no idea of how much is being spent by whom and on what. Such information provides trends and enables policy action to contain costs and plan for addressing the shifts in health-seeking behavior. Second, public spending is also driven more by historical precedent rather than evidence or need. Third, in the absence of a system of research, cost effectiveness of interventions does not become a factor while deciding on strategies, which may often entail substantial budgetary implications. Fourth, the system of fund releases is fraught with great uncertainties and often budget cuts imposed are arbitrary, entailing the unintended risks, such as for example, drug resistance as a consequence of the sudden stoppage of drug supply. Fifth, the present system of budgeting is good for accounting and ensuring expenditure controls but not useful for policy shifts. Finally, the administrative capacity to maintain accounts and monitor utilization is woeful at all levels -from the PHC to the Central Min-

istry, giving scope for misuse. In other words, the systems of health financing in India are archaic and need overhauling.

- Constitute an Expert Group to evaluate the current system of budgeting and harmonize the accounting needs of the Finance Department and the operational requirements of the implementing agencies at all levels.
- All spending departments must have a budget line with major and minor heads on the nature of health spending. This should be uniform for all departments throughout the country and compiled systematically on an annual basis.
- Standardization of treatment protocols and unit cost estimations should be taken up and a schedule of benefits published. This then could be the basis for public funding of health in both public and private facilities. This will also enable people to get an idea of how much a service ought to cost and protect them from being exploited.

Section III — Way Forward

1. Organizational and financial restructuring

The existing system of delivery and financing will neither protect cost inflation and consequent impoverishment of the people nor help achieve health outcomes. The system has the worst features of health financing: unregulated, fee for service, technology and provider-driven, private insurance-led systems of risk protection, non-incentivized payment systems, etc. with the insurance function of public spending being limited in its impact as it is underfunded, dysfunctional and too narrowly focused on specific disease conditions.

- It is recommended that public spending be increased from the current level of 1.2% to 3% of GDP. The investment plan provides the suggested areas for such increases in funding, with priority focus to three areas : improving, upgrading and strengthening the battered health infrastructure in the country to conform to minimum standards, increasing the regulatory and information dissemination capacity of the government and R&D. It is believed that investment along these lines over the next ten years in a strategic way, will enable India achieve the MDGs' as well as the targets laid down in the NHP, 2002.
- Increase public investment to primary health care for providing universal access to a basic package of services at CHCs and facilities below it, alongside reorganizing the structure for enhancing accountability and increased sharing of oversight functions by the communities and local bodies. This will address about 90% of the health needs of the community and reduce household spending on these services.
- Rather than funding specific line programmes, restructure the financing system to fund packages of health care: core packages, basic health packages and packages for secondary care. Such packages enable the inclusion of preventive, promotive and curative service provisioning. To arrive at the cost of the package, unit cost estimations need to be taken up based on agreed treatment protocols that have the consent of professional bodies and therefore be enforceable.
- Upscale the investment on public health education and

information from the current abysmal levels to reach 20% of the total government health spending. To start with, allocate at least Rs 50 per capita per year or 5% of the budget, whichever is more on prevention of disease and promotion of health values. Of this we recommend a ratio of 2:2:1 to be spent by local bodies and Village Health Committees on mass media campaigns against tobacco, risky sexual behaviour and promotion of health values such as yoga, etc. and on the establishment of the Epidemiological and Health Information and Disease Surveillance Units at CHCs, and at the district, state and central levels.

- Experiment with alternate financing models in a few districts for one year to obtain insights for designing new financing systems that would help contain cost. The shift should be towards the state becoming a financier and purchaser of care, alongside own provisioning to ensure that the patient gets the care as per his choice and also of good quality.
- Gradually shift towards a mandatory Universal Health Insurance System for secondary and tertiary care. There is also a need to carefully examine the substantial evidence available globally on the extensive market failures of private health insurance, particularly in the context of future risk to government finances and accordingly design the model that would be suitable and sustainable for India, that has a huge population with limited capacity to pay. Besides, for deepening the Health Insurance markets, action should be initiated to put in place the appropriate regulatory and institutional mechanisms, for example, the necessary health laws to govern health insurance business and a health regulator to oversee the enforcement of such regulations.
- Merge CGHS and ESIS, expand membership to others and reconstitute it as a Social Health Insurance Corporation of India. A new management culture and professional skills will need to be injected for managing such a Corporation. The SHIC may act as a re-insurer like NABARD to refinance other Health Insurance companies or entities. Without such a mechanism, financial risk protection for the poor will be impossible unless the Government chooses to fund the entire expenditure that may then require a five fold increase in the current level of health budgets.
- Given the limitations of our ability to have a single payer model and the diversity and complexity of India, the need for plurality will need to be recognized. Hospitals that have more than 500 beds and five superspecialties; NGOs, cooperative societies, PSUs or District Health Authorities having a minimum of 10-15,000 members and own hospitals networks; TPAs having a similar membership and provider networks, etc. should be permitted to provide insurance policies as a competitive environment can theoretically ensure efficiencies. But international evidence needs to be kept in mind. It is recommended therefore that assistance of external experts be availed of for designing the UHS for India.
- To keep premiums low and promote large risk pools, insurance should be made mandatory for all. This should be implemented in phases starting with all employees in the public or private sector. They can be given the choice of enrolling with a Social Health Insurance Company. In the subse-

quent phases, community groups should be enrolled. While premiums will need to be community-rated but income-related, even the poor must pay some amount. For this, loans can be made available to be repaid over the year. In the case of no claim, after five years, the money should be refunded to the poor with interest.

- Government subsidy for rural communities and urban poor should be 30% of the premium be provided as an incentive to those having 70% enrolment. This will be only fair and on par with the employed who get 30% tax exemption for insurance. This will also act as an incentive and stimulate solidarity for formation of risk pools.
- The design features of the insurance programme needs to be carefully thought, particularly in the absence of any expertise, research or experience on provider and consumer behaviour in such circumstances in India to guide us. It would be useful to have on a long-term basis (not as short-term consultants) experts from the more mature market economies to assist us in the process.

Increasing accountability and focusing on monitoring

- Increase performance -based accountability by improving monitoring through concurrent sample surveys, social audit and institutionalizing community management at all levels through elected management committees in the village, at the PHC and the CHC.
- After building appropriate capacity, gradually shift to giving greater managerial and financial autonomy to provider units which could be formed into Public Trust Hospitals with their own board of Directors consisting of experts and representatives of civil society / local residents.

Section IV

Investing in health: Financing the way forward

The amount required for implementing the Way Forward is estimated to be about Rs.74,000 crores of which about Rs. 33,000 crores is for capital investment – Subcenters, primary health centers, CHC, and upgradation of district hospitals etc. About Rs. 9,000 crores is the estimated amount that may be required to be spent towards premium subsidy for the poor when and if the social health insurance policy gets universalised over the years.

Since health outcomes are the result of other health related activities such as water, sanitation, nutrition, primary schooling and road connectivity, an analysis was undertaken to estimate for 15 major states of India, the order of funds required additionally to achieve the national norms under these sectors set by the GOI. Analysis showed that these states needed an amount of Rs. 3 lakh crores. These estimations were based on very bare and minimal norms such as Rs. 3 per capita for nutrition or just the cost of constructing the minimum facilities and positioning manpower in the CHC's, PHC's and Subcenters. To bridge this resource gap an analysis was also undertaken to assess the amounts that the states can them-

selves mobilize and the additional amounts that would be required from the central government. Analysis showed a "taxable capacity" of Rs.2.40 lakh crores of which 255 can easily be allocated to health. Analysis also showed that 6 states had the potential to shore up the required level of revenues, while the remaining 9 required an additional support of Rs. 20,800 crores. These are also the worst performing states having the highest disease burden. Finally, there is a need to formulate a comprehensive approach to raising resources for increasing the spending on health and the related sectors of water, sanitation, nutrition and primary schooling, from the current level of 2.7% of GSDP to 9.7% – an increase by 7% of GSDP over the next few years if we are intent on achieving the targets agreed to under the various national policy documents and MDG.

- It is recommended that given the historical neglect of health and health related sectors and the worrying decline in social sector spending in the post 1990 period, amounts equivalent to 2% GDP be mobilized by means of general taxation. Given the current financial problems, an Expert Group may be constituted to work out the modalities of how to mobilize this additional resource through taxation and within what time period.
- Through a combined approach consisting of broadening the tax base and improving tax administration mobilize further amounts. Other measures could range from increasing medical tuition fees, imposing taxes on tobacco and alcohol, levying a "health tax" on corporate hospitals and hospitals that have foreign patients; making contributions and donations to medical colleges corpus/ public hospitals etc. income tax free etc.
- Review the various schemes being implemented by various ministries to reduce duplication and ensure greater synergy for optimizing returns. Such measures will generate further revenues;
- Review the donor funded projects in the health sector to ensure that such assistance is aimed towards 1) the poorer states for rebuilding their health system by addressing their needs for capital investment; 2) building institutional capabilities; and 3) improving the capacity to deliver services in a comprehensive manner and in accordance with the guidelines laid down in this Report;
- Donor funded projects tend to be expensive and unsustainable in a deteriorating fiscal environment. Therefore, there is a need to more carefully evaluate the long-term financial implications at the design stage itself;
- Donor funding agencies have also multiplied manifold, with each having their own project requirements and monitoring formats. Preparation of projects for donor funding are highly time intensive and often disrupt routine work by diverting key professionals to project preparation. Thought needs to be given on building a more systematic and simplified approach;
- Disparities in health justify according higher priority to poor performing states. However, it is essential to ensure that better performing states, where health gains have been achieved, are not allowed to be eroded or slide back. In other words, sufficient investment and policy attention must con-

tinue to be provided to the better performing states to ensure that the skills acquired and efforts are not lost and due vigilance is maintained.

- Develop supportive policies that will enable the poorer states to mobilize such donor funding;
- Implement the concept of equalization to guide releases of central grants so as to aim at the goal of having such investments enable all states, regions within states and populations within such regions to come up to a measurable national average bar of healthy well being within a time frame.

Way forward: The next steps to obtain social consent

Health affects all citizens. It is therefore essential that the system be designed to reflect the aspirations, needs and

requirements of the people as well as those who provide them the services. Building a social consent through a consultative process will provide greater sustainability to the reforms proposed in this report. Accordingly, it is recommended that

- Task Forces consisting of knowledgeable and eminent people and representing all stakeholder groups be constituted to detail out the issues, the operational plans and financial implications;
- On issues requiring an intersectoral perspective a Group of Ministers may be constituted to deliberate the various policy issues.

The key issue is having a vision, defining it in clear terms and formulating the steps ahead in the knowledge that the realization of this strategy will take more than a decade and that action taken now will help the future generations.

Annexures



Annexure I

Core Package of Essential Health Interventions for Universal Free Services as Out Patients

List of diseases / health conditions	Approx. no. of cases for 2005 population	Unit cost of treatment (Rs.)	Total cost for treating (Rs. in crores)	Proportionate distribution of costs component-wise (in %)				
				Manpower	Equipment	Test	Drugs	System
Core package								
1. Childhood diseases / health conditions								
a. Immunization	26,315,925	84.51	222.39	32	21	0	12	35
b. Acute Respiratory Infections : Pneumonia	34,184,386	141.49	483.68	12	0	0	4	84
c. Diarrhoea : With some dehydration	34,184,386	269.82	922.37	51	0	0	5	44
d. Diarrhoea : With Severe dehydration	3,418,439	742.99	253.99	78	0	2	7	13
e. Dysentery	3,418,439	77.47	26.48	22	0	0	1	76
2. Maternal diseases / health conditions								
a. Antenatal care	26,315,925	278.46	732.80	11	0	0	56	34
b. Abortions	540,346	422.59	22.83	16	10	0	67	8
c. Female sterilization	4,726,882	886.99	419.27	59	2	5	32	3
d. Vasectomy	236,344	200.27	4.73	64	5	0	17	15
e. IUD insertion	6,202,399	86.89	53.89	30	2	0	0	68
f. Oral contraceptives	8,619,508	79.96	68.92	25	0	0	1	74
g. Condoms	17,476,568	79.96	139.74	25	0	0	1	74
h. Postnatal care	26,315,925	236.88	623.37	13	0	0	33	55
3 Blindness								
a. Blindness due to refractive errors & Low Vision	2,884,777	165.97	47.88	42	4	0	16	38
4 Leprosy								
a. Paucibacillary	404,957	393.01	15.92	24	0	0	28	48
b. Multibacillary	213,036	1,167.53	24.87	21	0	0	57	21
5 Tuberculosis								
a. New sputum positive	3,900,000	840.98	327.98	38	0	4	28	30

Annexure I

Core Package of Essential Health Interventions for Universal Free Services as Out Patients [Continued]

List of diseases / health conditions	Approx. no. of cases for 2005 population	Unit cost of treatment (Rs.)	Total cost for treating (Rs. in crores)	Proportionate distribution of costs component-wise (in %)				
				Manpower	Equipment	Test	Drugs	System
b. New sputum negative	3,800,000	780.02	296.41	41	0	0	26	32
c. Treatment after default / Retreatment / Failure	397,922	1,240.36	49.36	32	0	0	38	30
d. Extrapulmonary	800,000	780.02	62.40	41	0	0	26	32
6 Vector borne diseases								
a Malaria : P. falciparum	814,800	150.60	12.27	19	0	13	6	62
b Malaria : P. vivax and P. ovale	1,222,200	148.81	18.19	19	0	13	5	63
c Kala azar	17,321	1,677.09	2.90	36	0	21	6	37
7 RTIs / STIs	4,929,763	956.90	471.73	41	0	0	13	46
8 Preventive and promotive activities @ Rs. 20 per capita to be spent by Gram Panchayats / Village Health Committees	1,061,126,000		2122.25					
9 Minor injuries including falls	23,746,056	225.85	536.31	33	0	0	41	26
10 Other minor ailments	265,281,500	57.54	1526.50	40	0	0	8	51
11 Snake bite	3,957,676	462.65	183.10	49	0	0	27	24
Grand Total (Rs. in crores)			9,700					
Total cost per capita (Rs.)			90					
GRAND TOTAL FOR CORE PACKAGE OF SERVICES (OUTPATIENT AND INPATIENT) (Rs. in crores)				9,700				

N.B. Manpower includes the time devoted by doctors, nurses and other staff directly for patient care.
 Equipment includes depreciated annual cost of equipment per patient for treating a particular disease.
 Equipments that can be used by many departments (like weighing machine, BP instrument, Boyle's apparatus, etc) were not included here and instead included in systems cost.
 Laboratory & diagnostic equipments were not included here as the charges of tests charged by some govt. hospitals were used for costing of tests.
 Cost of test includes the user charges for tests charged by some govt. hospitals.
 Cost of drugs include the minimum cost of treatment of a particular disease / health condition.
 Systems cost include salaries of doctors & nurses / ANMs apportioned on estimated time spent on administration, cost of equipment used by many departments, depreciated cost of building & its maintenance & other operational costs like consumables.
 Estimation of manpower costs are based on salaries in government sector; salaries of manpower in private sector could be 100 to 200% higher
 Estimation of costs of drugs is based on government procurement prices; in private sector cost of drugs could be 50 to 100% higher
 System cost per case could be reduced by improving quality and hence efficiencies by more number of cases coming to each health facility

Annexure II

Basic Health Care Services to be provided at 30-bed Community Health Facility located at 1,00,000 population

(including all inpatient treatment required at CHC for Core Package)

List of diseases / health conditions	Unit cost of treatment (Rs.)	Approx. no. of cases for 1 lakh population	Total cost for treating (Rs. in lakhs)	Proportionate distribution of costs component-wise (in %)				
				Manpower	Equipment	Test	Drugs	System
A. Inpatient treatment required at CHC for Core package								
1. Childhood diseases / health conditions								
a. Birth asphyxia	1,621.14	25	0.40	36	47	0	10	7
b. Neonatal sepsis	7,086.53	25	1.76	83	0	1	7	8
c. Low birth weight (Bwt 1500-1800g)	1,604.73	99	1.59	49	6	1	21	22
d. Low birth weight (Bwt 1800-2500g)	1,460.20	570	8.33	13	6	0	0	81
e. Acute Respiratory Infections: Severe pneumonia	4,435.18	322	14.29	66	0	2	21	10
2. Maternal diseases / health conditions (to be provided free to 50% and user charges collected for cases from APL families)								
a. Normal delivery	509.89	2,108	10.75	82	7	0	0	12
b. Puerperal sepsis	1,102.66	18	0.20	51	0	4	21	25
c. Septic abortion	1,102.66	5	0.06	51	0	4	21	25
d. Antepartum hemorrhage	4,657.31	12	0.56	73	2	0	6	19
e. Postpartum hemorrhage	3,568.40	21	0.75	72	3	4	4	17
f. Eclampsia	8,115.83	25	2.03	88	1	2	2	6
g. Obstructed labour	2,192.23	32	0.70	53	4	2	11	30
h. Remaining Caesarean Sections	2,192.23	92	2.02	53	4	2	11	30
i. Severe anemia	2,333.79	248	5.79	27	0	0	61	12
3 Blindness								
a. Cataract blindness (to be provided free to 50% and user charges collected for cases from APL families)	1,737.01	452	7.85	24	37.00	1	4	34
4 Vector borne diseases								
Malaria : Complicated	914.78	40	0.36	46	0	2	23	30
Sub-total (Rs. in lakhs)			60					
Per capita cost (Rs.)			60					
Total cost of providing inpatient care for Core Package of			6,300					
* Recovery from households includes recovery from BPL families N.B. These costs are based on the assumption of recovery of total cost of treatment from all cases from APL families								

Annexure II**Basic Health Care Services to be provided at 30-bed Community Health Facility located at 1,00,000 population** [Continued]
(including all inpatient treatment required at CHC for Core Package)

List of diseases / health conditions	Unit cost of treatment (Rs.)	Approx. no. of cases for 1 lakh population	Total cost for treating (Rs. in lakhs)	Proportionate distribution of costs component-wise (in %)				
				Manpower	Equipment	Test	Drugs	System
services (Rs. in crores)								
Total cost of providing outpatient care for Core Package of services (Rs. in crores)			9,700					
GRAND TOTAL FOR CORE PACKAGE OF SERVICES (OUTPATIENT AND INPATIENT) (Rs. in crores)			16,000					
B. Additional services to be performed at CHC for Basic Package								
1 Chronic otitis media	163.88	3,000	4.92	33	2	0	29	36
2 Diabetes mellitus								
Without insulin	1,139.43	2,065	23.53	13	0	25	51	11
With insulin	5,109.46	885	45.23	3	0	21	73	2
3 Hypertension				8	0	56	28	8
With diet & exercise	424.84	857	3.64	21	0	56	0	22
With one drug	456.12	1,714	7.82	20	0	53	7	21
With two drugs	740.82	857	6.35	12	0	32	43	13
4 Chronic Obstructive Pulmonary Disease	1,008.81	1,461	14.74	20	0	54	16	11
5 Asthma	673.32	2,330	15.69	5	0	6	86	2
6 Major Surgeries	7,997.00	438	35.03					
7 Accidents / major injuries	8,777.77	438	38.45					
8 Counselling for Psychiatric Care	318.87	6993	22.30	63	0	0	0	37
Per capita costs (Rs.) @ 70%			310					
Total costs for 7951 CHCs (Rs. in crores) in rural areas			24,650					

N.B. These calculations are based on the assumption of about 70% estimated cases availing of services
 These calculations are based on the assumption of recovery of cost for a utilization by an estimated 70% of population
 Manpower includes the time devoted by doctors, nurses and other staff directly for patient care
 Equipment includes depreciated annual cost of equipment per patient for treating a particular disease.
 Equipments that can be used by many departments (like weighing machine, BP instrument, Boyle's apparatus, etc) were not included here and instead included in systems cost.
 Laboratory & diagnostic equipments were not included here as the charges of tests charged by some govt. hospitals were used for costing of tests.
 Cost of test includes the user charges for tests charged by some govt. hospitals.
 Cost of drugs include the minimum cost of treatment of a particular disease / health condition.
 Systems cost include salaries of doctors & nurses / ANMs apportioned on estimated time spent on administration, cost of equipment used by many departments, depreciated cost of building & its maintenance & other operational costs like consumables.
 Estimation of manpower costs are based on salaries in government sector; salaries of manpower in private sector could be 100 to 200% higher
 Estimation of costs of drugs is based on government procurement prices; in private sector cost of drugs could be 50 to 100% higher
 System cost per case could be reduced by improving quality and hence efficiencies by more number of cases coming to each health facility

Annexure III

Cost of providing Secondary Care services at District Hospital

List of diseases / health conditions		Unit cost of treatment (Rs.)	No. of cases per lakh population	Total cost (Rs. in lakhs)	Cost in percentage (per case)					
					Manpower	Equipment	Test	Drugs	System Cost	Total Cost
Secondary Care Package										
1	Cardiovascular diseases									
a.	Coronary Artery Disease									
	Incident cases	12,324.18	283	34.84	48	2	10	34	6	100
	Prevalent cases	5,069.10	3,353	169.97	6	-	23	67	4	100
b.	Rheumatic Heart Disease									
		1,406.43	72	1.01	34	15	25	8	18	100
2	Acute Hypertensive stroke									
		10,028.87	118	11.79	60	-	11	24	5	100
3	Cancers									
						-				
a.	Breast cancer									
		4,289.44	11	0.46	54	-	14	8	23	100
b.	Cancer of cervix									
		10,016.04	10	1.00	23	-	4	63	10	100
c.	Lung cancer									
		3,854.44	2	0.08	60	-	2	12	26	100
d.	Stomach cancer									
		7,106.55	3	0.21	33	-	5	55	7	100
4	Mental diseases / health conditions									
a.	Schizophrenia									
	Without Hospitalisation	1,844.40	289	5.33	44	-		40	16	100
	With Hospitalisation of 10 Days in 5%	5,093.80	15	0.78	57	-		14	29	100
b.	Mood / Bipolar disorders									
	Without Hospitalisation	2,982.34	1,543	46.01	27	-		63	10	100
	With Hospitalisation of 10 Days in 5%	6,053.76	81	4.92	45	-		31	24	100
c.	Common Mental disorders									
		1,987.25	2,030	40.34	20	-		65	15	100
d.	Child and adolescent psychiatric disorders									
		2,023.10	2,517	50.92	47	-		36	17	100
e	Geriatric problems including Dementia									
		6,273.69	406	25.47	13	-		81	5	100
f	Epilepsy									
		2,461.63	913	22.48	33	-		53	14	100
5	Major injuries & emergencies (50%)									
		8,777.77	438	38.45						100
6	Other major surgeries (50%)									
		7,997.00	438	35.03						100
	Total cost (Rs. in lakhs)			489						
	Premium per capita @ 70%			699						
	Total cost for a district of 18 lakhs population (Rs. in crores)			126						
	Total cost @ 70% (Rs. in crores) for 500 Districts			62,882						
N.B. These calculations are based on the assumption of about 70% estimated cases availing of services										

Annexure IV

Methodology for Unit Cost Estimates of Essential Health Investment (EHI) and Primary Health Infrastructure

I. Unit Cost Estimation of EHI :

1. The costs were estimated under five heads:
 - a. Manpower cost
 - b. Cost of equipment
 - c. Cost of laboratory investigations
 - d. Cost of drugs
 - e. Systems cost
2. These costs are based on managing diseases / health conditions only upto the District Hospital level, i.e., at sub-centres, at PHCs, at CHCs and at District Hospitals. Tertiary level care has not been included for the purpose of costing. Therefore, cost of operation for Rheumatic Heart Disease has not been included as part of these costs, just as radiotherapy / surgery for cancers, etc.
3. Manpower cost:
 - a. This was estimated based on time of health care providers (directly linked with providing health care) required for managing a case (one episode in case of acute disease, annually for chronic diseases and per child for immunization and per pregnant mother for ANC, etc.). The salaries of ward boys, sweepers, clerks, and administrative staff were not taken into account for managing the case - these were included as part of systems cost. Time taken for managing a disease / health condition was obtained from experts / clinicians.
 - b. Since there is a whole spectrum of severity of illness, the lower limit of time range provided by clinicians was taken for estimating manpower cost. E.g., for managing a case of birth asphyxia at a CHC, the clinician suggested inpatient treatment for 1-2 days, specialist's time of 1 hr / day and nurses' time of 2 hr / day. In this case, taking the lower limit of inpatient management, i.e., 1 day, it was estimated that a specialist would spend $1 \times 60 = 60$ min and a nurse would spend $1 \times 120 = 120$ min per case. Similarly, for managing a case of low birth weight baby with weight 1500-1800 g at CHC, the clinician suggested inpatient care for 3-5 days and specialist's time of $\frac{1}{2}$ hr, the manpower time of specialist was taken as $3 \times \frac{1}{2}$ hr = 90 min.
 - c. For estimating the manpower cost, the Central Government pay scales were considered. The middle of the scale was taken as the base and Non-Practicing Allowance (for doctors), Dearness Allowance, House Rent Allowance, City Conveyance Allowance, etc. were taken for calculation of total monthly salary. 24 working days per month and 6 hrs of work per day were taken into account for estimating the manpower cost per minute. Manpower salary for different categories was apportioned as per the time recommended by clinicians for managing a case.
 - d. For ICU / chemotherapy for cancers, clinicians recommended 24-hrs nurses' time. For apportioning this time, three shifts of nurses per day and one nurse for three beds was considered.
4. Cost of equipment:
 - a. Cost of different equipments was obtained from the market. There is a wide range in rates and specifications of same equipment. In most cases, the opinion of clinicians was taken for the specification to be taken. E.g., a labour table is available for Rs. 3500 (enamel coated), Rs. 10000 (stainless steel) and Rs. 150000 (with advanced features). The clinician recommended we take the cost of stainless steel labour table because of its intermediate cost and longer life.
 - b. Similar information on costs, maintenance and life of equipments was obtained from other institutions of repute.
 - c. The clinicians were consulted for knowing the life of equipment (in years or in terms of number of procedures). The cost of equipments was depreciated accordingly and annual costs apportioned to one case to arrive at unit cost of equipments.
 - d. Diagnostic equipments were not taken into account as the cost of laboratory tests were taken as such as explained below.
 - e. Cost of equipments required in specific clinical specialties was apportioned to management of a case of a disease. Cost of equipments that were used by many departments were not apportioned here, and were included as part of systems cost. E.g., Operating table, Boyle's apparatus, weighing machine, Blood Pressure instrument, etc. are used by many departments and costs of these were included in systems cost.
5. Cost of laboratory investigations:
 - a. An effort was made to estimate the cost of laboratory tests. But, arriving at the cost of one sputum examination took almost 5 working hours. This appeared to be not feasible and it was decided that some other mechanism would be followed.
 - b. These days many hospitals in India charge user fees from clients for various investigations. The costs of laboratory investigations charged by Rajasthan Medicare Relief Societies (RMRS) were taken into consideration for costing purpose.
 - c. Costs of those investigations that were not available from RMRS were taken from other such institutions. E.g., for spirometry and other pulmonary function tests, the charges of Patel Chest Institute, Delhi were considered.

6. Cost of Drugs:

- a. The treatment regimen (drug, dosage and duration) provided by clinicians was taken into consideration for arriving at the cost of drugs. This was based on the bare minimum required for managing a case of a particular disease / health condition. Thus, for the management of a case of diabetes only the cost of the drugs Metformin and Glibenclamide for managing uncomplicated diabetes were considered (and costs of Aspirin, Atorvastatin and Enalapril for managing complicated diabetes were not considered for the purpose of our costings).
- b. Initially, the retail cost of drugs was considered for arriving at the cost of drugs. For this, the retail cost of different drugs available in MIMS INDIA - Monthly Index of Medical Specialities - was considered. If there were more than one brand drugs available in MIMS, the minimum cost was taken.
- c. Later on, the tender rates of Tamil Nadu Medical Supplies Corporation (TNMCS) were incorporated (if they were available for the particular drug). After that, the tender prices of drugs procured by Central Procurement Agency of Government of Delhi, if any, were also incorporated to arrive at the drugs cost.
- d. As regards vaccines for immunization, the purchase prices of Government of India were considered.
- e. In short, now the drug rates used in the entire costing exercise contain rates from MIMS, TNMCS and CPA Delhi.

7. Systems cost:

- a. An exercise was undertaken by National Productivity Council (NPC), Delhi by survey of a number of health facilities for arriving at systems costs. The costs of building, equipment for general use (that had not been included in costs for managing a case of diseases / health conditions under consideration) and salary of staff (as explained in point 4(a)) were included as systems cost.
- b. The systems cost were estimated separately for OPD (at all levels), IPD (at PHC, CHC and District Hospital) and OT (at PHC (for Family Planning camps), CHC and District Hospital).
- c. Systems costs were estimated per case for OPD, per inpatient day for IPD and per operation for OT.
- d. In addition to attending to patients, medical (doctors) and paramedical staff (nurses, ANMs, etc.) are also involved in administrative work. 25% of salaries of doctors and 50% of salaries of paramedical staff (based on actuals as surveyed by NPC) were apportioned for administrative work and were included in systems cost.

8. Total Cost:

- a. The systems costs thus derived were then added to care of individual cases based on number of OPD visits, or number of days of inpatient stay, etc. to arrive at the total cost of managing a case of a disease / health condition.

Basis of estimating funds requirement for primary health care infrastructure

1. Number of institutions:

- a. Census 2001 population was considered for estimating the number of subcentres, PHCs and CHCs. The norm of one subcentre for 5,000 population in plains and 3,000 population in tribal areas, one PHC for 30,000 population in plains and 20,000 population in tribal areas, and one CHC for 1,20,000 population in plains and 80,000 population in plains was considered.
- b. State-wise tribal population was considered first for estimating number of primary health care institutions required in tribal areas. The remaining rural population was then considered for estimating number of institutions required in remaining rural areas. The requirement was estimated as 1,59,714 subcentres, 26,150 PHCs and 7,951 CHCs respectively.
- c. There are 1,37,311 subcentres in the country, and some States had an excess of subcentres, PHCs and CHCs even according to 2001 population. The estimates of budgetary requirements for strengthening primary health care institutions are based on the aggregate institutions required at country level and are based on the assumption that a redistribution of the institutions would be done.

2. Funds requirement:

- a. Funds requirement was estimated separately for new institutions and for already existing institutions, and separately for capital and recurring costs.
- b. Subcentres:

i. New subcentres:

1. Capital: For subcentre building, constructed area of 400 sq ft @ Rs. 400 per sq ft was considered. Two staff quarters of 375 sq ft each @ Rs. 400 per sq ft were considered. The requirement of equipment was estimated as Rs. 25,680 for providing services at the subcentre.
2. Recurring: Keeping in view the workload of ANM, two ANMs were considered for one subcentre. In addition, a male worker could be considered for selected areas where health programme indicators are poor. In addition, provision was also made for drugs @ Rs. 18,135 annually, and also for TA and other contingencies.

ii. Existing subcentres:

1. Capital: Two staff quarters of 375 sq ft each @ Rs. 400 per sq ft were considered. For renovation of subcentre, the estimates are based on the assumption that 50% subcentres require renovation @ 25% of estimated cost of constructing a subcentre. Similarly, all subcentres require equipment @ 25% of estimated cost of equipment.
2. Recurring: Recurring costs of a new subcentre were considered for already existing subcentre.

- c. PHCs:
 - i. New PHCs:
 - 1. Capital: For PHC building, constructed area of 1,500 sq ft @ Rs. 600 per sq ft was considered. Staff quarters for 1 MO and 3 Staff Nurses were considered. The requirement of equipment was estimated at Rs. 1,11,500.
 - 2. Recurring: It was assumed that one AYUSH doctor would be posted at PHC and there will be 3 Staff Nurses. In addition, there will be one Public Health Nurse practitioner (on contract to be arranged by the community), and no ANM or Health Educator or LHV at the PHC. Since there is no vehicle at the PHC, there will be no driver, and the services of Pharmacist and Class IV will be hired on contract. Funds for telephone, drugs, TA, for hiring services on contract and other contingencies have also been considered. Also, some provision has been made for transporting patients in need to the CHC / District Hospital (@ Rs. 300 per case for an estimated 80 cases per year). As regards drugs, an estimated Rs. 3.00 lakhs would be required for the treatment of essential health interventions covered under core package, which includes drugs for leprosy, malaria, TB, etc. also.
 - ii. Existing PHCs:
 - 1. Capital: Since there is already one staff quarter for MO at most PHCs, costs were estimated for staff quarters for 3 Staff Nurses. Based on RCH facility survey, it had been estimated that on an average each PHC requires about Rs. 9.7 lakhs for improvement of infrastructure (which includes civil works and equipment). This figure was considered for strengthening capital infrastructure of PHC.
 - 2. Recurring: Recurring costs of a new PHC were considered for running an already existing PHC.
- d. CHCs:
 - i. New CHCs:
 - 1. Capital: Constructed area of 4000 sq ft @ Rs. 600 per sq ft was considered for a CHC. Staff quarters for 4 MOs, 4 Staff Nurses and one chowkidar were considered. Requirement of equipment was estimated as Rs. 22.19 lakhs and an ambulance was also considered.
 - 2. Recurring: 8 Medical Officers and 10 Staff Nurses were considered at the CHC. An epidemiologist and a computer clerk were also included at the CHC for strengthening public health work in the CHC area. The services of mali, dhobi, ayah and Class IV would be hired on contract. In addition, some provision was also made for TA, Telephone and other contingency expenses. No provision for an ambulance has been made. However, for transportation of serious cases to a District Hospital, contractual arrangements could be made by the CHC as per local need.
 - ii. Existing CHCs:
 - 1. Based on RCH facility survey, it had been estimated that on an average each CHC requires about Rs. 44.0 lakhs for improvement of infrastructure (which includes civil works and equipment). This figure was considered for strengthening capital infrastructure of PHC. Since many CHCs already have some staff quarters for MO, costs were estimated for staff quarters for 3 MOs, 4 Staff Nurses and one chowkidar.
 - 2. Recurring: Recurring costs of a new CHC were considered for already existing CHC.

Annexure V

Estimated funds requirement for operationalizing Village Health Units

S. No.	Activity / expenditure head	Calculation	Estimated funds required (Rs.)
1	Salary / Honorarium to village health providers		
a	RMP	1200*12	14400
b	Dai	400*12	4800
c	Village level worker	400*12	4800
	Total		24000
2	Incentive to village health providers	2000*12	24000
	TOTAL for one village		48000
	TOTAL for five villages		240000
Assumption: On an average five villages in each subcentre area			

Savings on account of replacing subcentres by Village Health Units

S. No.	Activity / Expenditure Head	Subcentres (Rs.)	Village Health Units (Rs.)	Savings per subcentre on capital (Rs.)	Annual savings for 159714 subcentres in recurring costs (Rs. in crores)
1	Capital* (building, staff quarters, furniture, equipment)	493,680	8,000	485,680	
2	Recurring	333,855	240,000		1,499
	Total per subcentre	827,535	248,000	485,680	1,499
At present there are 137311 subcentres, but as per 2001 population and as per norms, 159714 subcentres are being recommended					
* Only equipment for Village Health Unit					

Annexure VI

Annual funds requirement for Subcentres

S. No.	Item	As per existing norms		As per revised norms		Difference between current & suggested norms (Rs.) for one SC
		Norms	Costs (Rs.)	Norms	Costs (Rs.)	
A	Capital / Non-recurring					
1	SC building*		513000	400sft@Rs.400/sft	160000	
2	Staff Quarters*	None	0	375sft@Rs.400/sft for 2 ANMs	300000	
3	Equipment		22100	Rs. 25680	25680	
4	Furniture	None	0	5% of bldg cost	8000	
	Sub-total		535100		493680	(41420)
B	Recurring					
1	Staff					
	Health Worker (F) / ANM	1	136260	2	272520	
	Health Worker (M)#	1	118800	0	0	
	Voluntary Worker	1	1200	1	1200	
2	Drugs* (at govt. prices)	Kits A&B 2/yr	5650		18135	
3	Travel allowance	Rs. 75/day		Rs.100/visitx10 visits	36000	
4	Other expenses	Contingency	2000	Rs. 500/mth	6000	
	Sub-total		263910		333855	69945
At present there are 137311 subcentres, and as per 2001 population, 159714 subcentres are being recommended						
*(Under RCH NPIP) Includes one ANM residential quarter						
# Proposing 845 Health Workers (M) to be funded by Govt. of India for a period of 3 years in each CHC in 65 districts having leprosy prevalence rate of more than 5 / 10,000 and 29000 Health Workers (M) at each subcentre for five years in 108 malaria intensive districts having API more than 2.						
Figures in parenthesis reflects savings.						

Annexure VII

Annual funds requirement for Primary Health Centers (for outpatient care and public health)

S. No.	Item	As per existing norms		As per revised norms		Difference between current & suggested norms (Rs.) for one PHC
		Norms	Costs (Rs.)	Norms	Costs (Rs.)	
A	Capital / Non-recurring					
1	PHC building	4000sft@Rs. 600/sft	2,400,000	1500sft@Rs.600/sft	900,000	
2	Staff Quarters	1 for MO @ 1200 sft	720,000	1200sft@Rs.600/sft x 4 (1 for MO & 3 for Staff Nurses)	2,880,000	
3	Equipment	1 kit each per district	41,500		111,500	
4	Furniture			5% of bldg cost	45,000	
	Sub-total		3,161,500		3,936,500	775,000
B	Recurring					
1	Staff					
	Medical Officer	1	315,225	1 (AYUSH)	252,660	
	Pharmacist	1	153,720	(on contract)	153,720	
	Staff Nurse	1	153,720	3	461,160	
	Health Worker (F) / ANM	1	136,260	0	-	
	Health Educator	1	153,720	0	-	
	Heath Assistant (Male)	1	171,180	0	-	
	Health Assistant (F) / LHV	1	171,180	0	-	
	Public Health Nurse practitioner	0	-	(on contract)	-	
	UDC / Computer clerk	1	118,800	1	-	
	LDC	1	91,330	1	91,330	
	Laboratory Technician	1	118,800	1	118,800	
	Driver	1	79,806	0	-	
	Class IV	4	277,320	(on contract)	-	
	Sub-total for salaries	15	1,941,061	8	1,077,670	(863,391)
2	Drugs	Under RCH	9,025		300,000	
3	Travel allowance	Rs. 75/visit		12visits/mth x 2 persons	28,800	
4	For contractual Class IV, Pharmacist	None	-	Rs. 3500 + 1500 / mth	60,000	
5	Telephone	None	-	Rs/ 1000/mth	12,000	
6	For hiring transport in emergency	None	-	Rs. 300/case x 80 cases	24,000	
7	Other expenses	No norms	-	Rs. 2000/mth	24,000	
	Sub-total		1,950,086		1,526,470	(423,616)
At present there are 22842 PHCs, but according to 2001 Census population, 26150 PHCs are being recommended Figures in parenthesis reflect savings						

Annexure VIII

Annual funds requirement for Community Health Centers

S. No.	Item	As per existing norms		As per revised norms		Difference between current & suggested norms (Rs.) for one CHC
		Norms	Costs (Rs.)	Norms	Costs (Rs.)	
A	Capital / Non-recurring					
1	CHC building	OT & LR	1,000,000	4000sft@Rs. 600/sft	2,400,000	
2	Staff Quarters	No norms	-			
	For MOs	1 MOs	1,440,000	1200sft@Rs.600/sft x 4 MOs	2,880,000	
	For Staff Nurses	No norms	1,200,000	1000sft@Rs.600/sft x 4 SNs	2,400,000	
	For chowkidar	No norms	240,000	400sft@Rs. 600/sft x 1	240,000	
3	Equipment	1 kit each type per distt	601,000		2,219,000	
4	Furniture	No norm	-	5% of CHC bldg cost	120,000	
	Sub-total		4,481,000		10,259,000	5,778,000
B	Recurring					
1	Staff					
	Specialists / Medical Officers	4	1,476,240	7	2,206,575	
	Staff Nurses	7	1,076,040	10	1,537,200	
	Public Health Nurse	0	-	1	171,180	
	Computer Clerk	0	-	1	91,330	
	Dresser	1	69,330	1	69,330	
	Pharmacist / Compounder	1	153,720	1	153,720	
	Laboratory Technician	1	118,800	1	118,800	
	Block Extension Educator	1	153,720	1	153,720	
	Radiographer	1	118,800	1	118,800	
	Ward Boy	2	138,660	(on contract)	-	
	Dhobi	1	69,330	(on contract)	-	
	Sweepers	3	207,990	(on contract)	-	
	Chowkidar	1	69,330			
	Aya	1	69,330	(on contract)	-	
	Peon	1	69,330	(on contract)	-	
	Mali	1	69,330	0	-	
	UDC	0	0	2	193,368	
	LDC	0	0	1	79,806	
	Epidemiologist (Medical Doctor)	0	0	1	275,822	
	Driver	0	0	(vehicle on contract)	-	
	Sub-total of salaries	26	3,859,950	28	5,169,650	1,309,700
2	Drugs	1 kit each type / distt	110,713		1,000,000	
3	Travel allowance	No norm	-	Rs. 75/day x 24 visits/mth	21,600	
4	For contractual dhobi, mali, ward boys, aya, peon	None	-	Rs. 1000/person/mth x 8 persons	96,000	
6	For vehicle on contract	None	-	Rs. 400/case x 150 cases	60,000	
7	Telephone	None	-	Rs. 2000 / mth	24,000	
8	Mobility support to MOs for holding clinics in PHCs	No norm	-	2 clinics per week in each PHC; Rs. 86940 / CHC	86,940	
9	Other expenses	No norm	-	Rs. 4000 / mth	48,000	
	Sub-total		3,970,663		6,506,190	2,535,527
	TOTAL		8,451,663		16,765,190	8,313,527
At present there are 3043 CHC, but as per 2001 population and as per norms, 7951 CHCs are being recommended						

Annexure IX

Funding Requirements for Differential Planning Based on Performance for Leprosy, Malaria & RCH

Description of problem		No. of districts*	estimated amount of additional Central Assistance (Rs. in lakhs)			
			1st year	4th year	6th year	Grand total for 10 years
Category I	High leprosy	14	216	-	-	649
Category II	High malaria	28	9,051	9,051	-	45,257
Category III	Poor performance on RCH indicators	158	18,267	18,267	18,267	182,671
Category IV	High leprosy & high malaria	2	677	647	-	3,325
Category V	High leprosy & poor performance in RCH	41	5,373	4,740	4,740	49,302
Category VI	High malaria & poor performance in RCH	70	30,721	30,721	8,093	194,072
Category VII	High leprosy, high malaria & poor performance in RCH	8	3,635	3,511	925	22,550
	Total (Rs. in lakhs)	321	67,941	66,938	32,025	497,826
	Total (Rs. in crores)		679	669	320	4,978
	Rounded off to the nearest '000 (Rs. in crores)					5,000
	* Names as per Annexure					
	Suggested interventions by Govt. of India in identified districts					
	a) For 65 Leprosy districts of leprosy		1 leprosy worker at every CHC for 3 years			
	b) For 96 Malaria districts with problem of malaria		1 Malaria Worker at every subcentre & 1 Malaria Officer at district for 5 years			
	c) For 276 districts with adverse RCH indicators		1 Nurse Practitioner at every PHC & 1 Gynaecologist at every CHC for 10 years			
	Estimated number of subcentres per district	269				
	Estimated number of PHCs per district	44				
	Estimated number of CHCs per district	13				

Annexure X

Investment requirements (These are based on bare minimum standards, costs and needs, largely Government prices which are 30%-50% lower than Private)

S. No.	Activity	No. of institutions / units / persons	Unit cost (Rs. in lakhs)	Funds required (Rs. in crores)		
				Non-recurring	Recurring	Total
I	Health Promotion			0.00	2000.00	2000.00
	Publicity & dissemination of information through mass media @ 10 per capita per year					
	Community involvement for preventive activities (Village Health Fund) and Gram Panchayats for Mandatory Functions @ Rs. 10 each per capita per year	250,000		0.00	2000.00	2000.00
	Sub-total I			0.00	4000.00	4000.00
II	Regulatory Systems					
(a)	National Drugs Authority (as recommended by Mashelkar Committee)	1	100.00	1.00	2.00	3.00
	Institute for Health Information and Disease Surveillance	1		0.50	3.00	3.50
	Commission for Excellence in Health Care (to be provided Rs. 1.0 crore as seed money, and to be self-financed thereafter) and recurring grants for Research	1	100.00	1.00	2.00	3.00
	National Council for Quality Assurance	1		0.50	1.00	1.50
	Health Infrastructure Finance Corporation (HSCC can be developed into this Corporation; need money of Rs. 1.0 crore)	1	100.00	1.00	0.00	1.00
	Indian Medical Devices Regulatory Authority (to be provided a seed money of Rs. 1.0 crore & to be self-financed thereafter) and Grant for Research	1	100.00	1.00	1.00	2.00
	Sub-Total			5.00	9.00	14.00
(b)	Enforcement of regulations					
	Quality Assurance Cells for Central, levels State, District and facility	8500 Facilities of Govt. upto CHC level	5.00	425.00	435.00	860.00
	Epidemiological Health Units at Centre, State, District and CHC levels			10.00	425.00	435.00
	Professional Councils (MCI, DCI, PCI, INC)	95	5.26	3.00	2.00	5.00
	Drug Inspectors as recommended in Mashelkar Committee	1,265	1.44		18.00	18.00
	Sub-total			438.00	880.00	1318.00
	Sub-total II			443.00	889.00	1332.00
III	Human Resources for Health					
	<i>Capital infrastructure requirements for Human Resource Development</i>					
	Opening New Nursing Colleges	225	650	1350.00	112.50	1463
	Upgrading Nursing Schools into Nursing Colleges	769	340	2307.00	307.60	2615
	Strengthening existing Nursing Colleges	266	140	266.00	106.40	372
	Opening new Medical Colleges	60	8,000	3360.00	1440.00	4800
	Upgradation & Strengthening existing govt. Medical Colleges	125	400	400.00	100.00	500
	Establishing Schools of Public Health	6	3,100	113.00	73.00	186
	Sub-total III			7796.00	2139.50	9936
IV	Training					
(a)	<i>Training of Village level functionaries</i>					
	Training of Village Health Committees, (15 /VHC) Gram Panchayats (10/GP) Clerical staff (2/GP) = 27-30 per Village. @ Rs 300 per Person and Administrative overheads	250,000	300 per person	0.00	225.00	225.00
	Training unqualified RMPs on a pilot basis for six months over a period of one year, which could be followed up by reorientation trainings over the next two years; the costs calculated here do not contain cost of reorientation training	100,000	0.34	0.00	58.00	58.00
	Training , development & supervision of Village Level Worker	250,000	-	390.00	250.00	640.00
	Sub-total			390.00	533.00	923.00

Annexure X

Investment requirements [Continued]

S. No.	Activity	No. of institutions / units / persons	Unit cost (Rs. in lakhs)	Funds required (Rs. in crores)		
				Non-recurring	Recurring	Total
(b)	<i>In-service health personnel</i>					
	Training of MOs for 9 months for multi-skilling in different specialities (Gynae/Obs, Peds, Public Health, Anesthesia)	32,000	1.45	463.00	0.00	463.00
	Posting 2nd & 3rd yr PGs in Sub-district and District Hospitals for 6 months	4,600	0.11	0.00	13.98	13.98
	Creating more posts of PG students	440	2.64	0.00	11.54	11.54
	Fellowships for Doctors, Nurses, Social Scientists and Public Health Specialists	1,350	0.74	0.00	10.00	10.00
	Non-practising allowance to Teaching faculty	11,100	0.36	0.00	40.00	40.00
	Rural allowance for health personnel	63,600	0.24	0.00	153.00	153.00
	Training of Pharmacists	559,000	74.96	0.00	4.00	4.00
	Sub-total			463.00	232.52	695.52
	Sub-total IV			853.00	765.00	1618.00
V	Research and Development (ICMR for Basic Research, & Operational Research)			750.00	3250.00	4000.00
	Sub total V			750.00	3250.00	4000.00
VI	Delivery of health care services (Bare Minimum Requirements)					0.00
	Primary care					0.00
(i)	Subcentres-Norm - Subcentre Building & 2 Residential Quarters					0.00
	Strengthening and maintaining existing subcentres (Gaps in Building & Equipment)	137,311	5.74	5431	4584.00	10015
	Opening new subcentres	22,403	8.28	1106	748.00	1854
	Sub-total			6537	5332.00	11869
(ii)	PHCs - Norm - PHC Building & 4 Residential Quarters					
	Strengthening and maintaining existing PHCs	22,842	34.16	7150	3798.00	10948
	Opening new PHCs	3,308	55.99	1302	550.00	1852
	Organizing mobile clinics in selected remote areas	818	1.48	0	12.11	12
	Sub-total			8452	4360.11	12812
(iii)	CHCs - Norm - Hospital Buiding & 8 Residential Quarters					
	Strengthening and maintaining existing CHCs	3,043	126.60	2800	2130.00	4930
	Opening new CHCs	4,908	172.58	5035	3435.00	8470
	Sub-total			7835	5565.00	13400
(iv)	Strengthening Secondary level institutions (DH & SDH) in all except 9 States	900	150	750	450.00	1200
	Sub total			750	450.00	1200
(v)	TNMSC type organization for 20 States (taking Depots on Rent)	20	1,000.00	60.00	140.00	200.00
	Sub-total			60.00	140.00	200.00
(vi)	Additional Staff Support for Intensified implementation of programmes in 321 districts based on differential planning	321		0.00	5000.00	5000.00
	Sub-total			0.00	5000.00	5000.00
(vii)	Information Technology in Health			335.25	111.75	447.00
	Sub- total			335.25	111.75	447.00
	Sub- total VI			23968.92	20958.86	44927.78
VII	Social Health Insurance					
	Merger of ESIS & CGHS					
(a)	Orientation training of staff on patient charter	5,000	0.07	0.00	3.38	3.38
(b)	30% Premium Subsidy for BPL Families				9000.00	9000.00
	Sub-total VII				9003.38	9003.38
	GRAND TOTAL			33,811	41006	74,817
Inflation factor for adjusting fund requirement (@ 7% inflation rate per year) Inflation adjusted annual funds requirement (Rs. in crores)						

Annexure XI

Generation of additional revenues

The issue of tax potential has attracted the attention of the researchers in the past. At one level, there are some scholars like Colin Clarke who preferred to make judgements about tax revenue that should/could be mobilised and he suggested that the ratio of 25 per cent of GDP as the normative number. In contrast, there are others such as Musgrave who suggested that absolute taxable capacity is a myth and specifying this involves making arbitrary judgements. Therefore, the scholars should be concerned with "optimal budgets" which meant that each country should determine decisions to raise revenues depending on the degree of market failure and the extent of state intervention envisaged. Here again, he suggests the need to make a crucial difference between public provision and public production of services (Musgrave, 1973)

While absolute taxable capacity is difficult to conceptualise and impossible to measure in any objective sense, Musgrave (1959) emphasises the relevance and importance of relative taxable capacity. This can be estimated by comparing different countries or sub-national units in a federation. Thus, two countries or sub-national units in a country which are similar in economic circumstances should be able to generate equal amount of revenue and the differences could then be attributed to the differences in their preference patterns. Thus taxable capacity of different units in a federation can be estimated by estimating the "average" behaviour of the states in raising revenues after controlling for economic factors that can cause differences in taxable capacity.

Thus, taxable capacity of a country/state is defined as the revenue it can generate if it levied an average effective rate of tax on its base (Bahl, 1971, 1972). Alternatively, one can also specify and estimate taxable capacity with respect to the highest effective tax rate or any other exogenously specified effective tax rate. Given that the ability to raise tax revenues may be more than proportionately higher in a more developed country/state, the effective tax rate will have to be determined with respect to the development of a particular state and a simple average would not serve the purpose. This, therefore, has to be estimated using statistical techniques to take account of the non-linear relationship between the level of development and taxable capacity.

Variations (variance) in tax revenues between different States (σ_t^2) may be due to variations in their capacity to raise revenues (σ_{tc}^2) or variations in the efforts put in by them (σ_{te}^2).

$$\sigma_t^2 = \sigma_{tc}^2 + \sigma_{te}^2 \dots\dots\dots(1)$$

If one were able to identify all the factors that contributed to taxable capacity variation, it would be possible to estimate it. Alternatively, if one controlled for variations in tax effort among states, it would be possible to derive their taxable capacity.

There are three alternative methods employed to estimate taxable capacities of the states. These are (a) Aggregate Regression (AR), (b) Representative Tax System (RTS) (c) Tax Frontier Approach. Appropriateness of the method to be employed

to estimate taxable capacity depends on the availability of disaggregated data, the extent to which the relationship between taxable capacity and the variables representing it are perceived to be non-linear, and the degree of interdependence of the tax base with tax rate. It is useful to discuss the three methods used in some detail.

Aggregate Regression approach:

In the Aggregate Regression (AR) method, the actual tax revenue (termed as tax performance) is regressed on all factors representing variations in taxable capacity. Thus, tax - GSDP ratios or per capita tax revenue of the States are regressed on taxable capacity variables. Taxable capacity variables essentially represent the variables representing the tax bases or their proxies. This can be done in a cross-section model or, in order to get greater degrees of freedom, by combining cross-sections in a co-variance model. The estimated parameters of the equation provide behavioural relationship between tax-GSDP ratio (or per capita tax revenue) and various capacity factors estimated in the equation. If it is hypothesised that the taxable capacity is a non-linear function of taxable capacity variables, it is possible to make the hypothesised functional specification in the model.

Once the behavioural relationship is estimated, it is easy to estimate the taxable capacity by substituting the actual values of the taxable capacity variables in the equation. The estimated coefficient for each capacity variable gives the "average" behavioural relationship and substituting the actual capacity variables provides the estimate of taxable capacity of each state. The estimation of tax capacity above assumes that the coefficients of the respective bases (which indicate the average effective rate at which the bases are used across States) represent the normative rates at which States ought to raise taxes. The residual term, which is the difference between the actual tax revenue and the estimated tax capacity, is then used to indicate the tax effort of the respective states.

There are a number of shortcomings in this approach. First, it may not be able to include exhaustible list of taxable capacity factors and therefore, the unexplained variation, which is attributed to tax effort may actually be due to omitted variables. Second, even if it is assumed that all taxable capacity factors are included, the residual variation is the combination of variations in tax effort and the random error term and to attribute it entirely to tax effort may not be appropriate. Finally, some variables may impact on both taxable capacity and tax effort and it may not always be possible to isolate the effect of capacity from effort variables. Thus, higher per capita GSDP or urbanisation in State may also represent better organisation of the economy and ensure greater effort.

Later studies have tried to improve upon this implicit assumption by separating out the effect of tax effort of individual states from the random error element by combining cross-section observations over time and introducing state-specific fixed effects in the regression specification using panel

data (First Report of the Ninth Finance Commission 1988, Coondoo et.al, 2000). However, it is important to note that the state-specific (fixed) effect may also be due to a variety of other factors and not entirely due to tax effort. Any omitted variable that is specific to the State and changes slowly (or does not) over time will also be captured by the State-specific fixed effect. Hence, what portion of the State-specific fixed effect can be attributed exclusively to tax effort may be an arguable issue.

Representative tax system approach:

The Representative Tax System (RTS) approach to measuring taxable capacity was first employed by the Advisory Commission on Intergovernmental Relations (ACIR) in the United States. In this approach, taxable capacity is estimated for each of the taxes levied by the States. The taxable capacity of each tax is estimated by applying the "representative" rate to the tax base of the state. The generally taken representative rate is the average effective rate of each of the taxes levied in States. This is estimated by dividing all states' revenue collection from the tax with the sum of the value of the tax base over all the States. As in the AR approach, this assumes that the average effective tax rate of the States is the normative rate at which the States ought to levy. The taxable capacity of different taxes is summed to arrive at the aggregate taxable capacity of a state. The ratio of actual tax collection to the tax capacity (as estimated above) then provides an indicator of the relative tax efforts of different States.

The major shortcoming of this approach is that it assumes that individual tax bases are independent of each other (Second Report of the Ninth Finance Commission). Secondly, the approach assumes that tax bases and rates are independent of each other and the average effective rates adequately capture the non-linear relationship between the tax bases and rates (Sen and Tulasidhar, 1988). Besides, the data requirement for applying this approach is large and in most cases disaggregated data on various tax bases or even their close proxies are simply not available. The method is also suitable only when there is significant homogeneity in the tax structures (Chelliah and Sinha 1983).

Tax frontier approach:

In the Tax Frontier (TF) approach, the taxable capacity of states is conceived as a production frontier and the distance from the frontier is considered as the tax effort. Thus, technical efficiency is interpreted as the tax efficiency of states or the tax effort. The main difference of the TF approach with the AR and the RTS approach is in the way in which the normative rate for estimating tax capacity is indexed. While in the TF approach the normative rate is equated with the highest rate,

in the AR and RTS approach, it is the 'average' rate that is used as the norm. The TF approach has however been criticized on the grounds that the formulation of tax capacity as a production frontier is ill-conceived. It is argued that unlike firms, whose objective is to maximize profits, the primary objective of States is not to maximize tax revenue (Coondoo et. al. 2000).

Thus, all the existing methods to measuring taxable capacity and effort have shortcomings. In addition,, there is a serious problem in the States' tax system in India which prevents the objective assessment of the taxable capacities of the states. It must be noted that states' sales taxes which contribute to about two-thirds of own tax revenues are not destination based. The system of cascading sales taxes coupled with the levy of inter-state sales tax results in significant inter-state tax exportation (Rao and Singh, 2005, Ch.9). When there is full forward shifting of the tax, inter-state tax exportation is from the richer to poorer states. Thus, the tax revenues collected by the State governments include collections from non-residents.

In this exercise, we have used the aggregate regression approach to measure taxable capacity of the States with some modifications. As the emphasis is in generating additional revenues to create fiscal space for financing incremental expenditures in the health sector, the study first tries to project tax revenues at average effort and then, tries to measure the revenue gains through increase in the effort itself.

As mentioned earlier, relative taxable capacity using the regression approach is estimated by regressing the variables representing the tax bases and their proxies on the tax-GSDP ratio of the States in cross-section regression. Apart from tax bases, it also requires the identification of other factors that facilitate revenue collections, particularly those representing organisation of the economy. Earlier studies have used various indicators to estimate tax performance. The most common indicator that has been used in almost all studies on the issue is State income (Nambiar and Rao 1972, Sen (1983), Oommen 1987, Finance Commission 1988, Coondoo, Majumdar and Neogi 2000). Along with State income, Oommen (1987) also used its components such as the proportion of income from agriculture, proportion of income from manufacturing and proportion of income from hotels, trade and commerce to explain variation in tax performance.¹ He argued that income from hotels, trade and commerce would affect the sales tax revenue while income from manufacturing would affect both the sales and excise tax revenue. Nambiar and Rao (1972), Sen (1983) and Finance Commission (1988) also used non-agricultural income and non-primary sectoral SDP in addition to State income to explain tax performance. However, these variables are components of State income causing multicollinearity problems.² Sen (1983) also used percentage of population below the poverty line. Also, Coondoo, Majumdar and Neogi (2000) used per capita bank deposits and per capita power consumption of States in addition to State income. Apart from these variables, Nambiar

1 • However, due to the inclusion of the individual components of State income, the variable for aggregate State income was insignificant (possibly due to multicollinearity problems) and was later dropped.

2 • Finance Commission (1988) included both State income and non-primary sectoral SDP in the regression equation. Possibly due to the multicollinearity, they found that while the coefficient of State income was significant, the coefficient of non-primary sectoral SDP was insignificant

and Rao (1972) and Sen (1983) used the degree of urbanisation, Finance Commission (1988) used inequality of consumption expenditure (indicated by Lorenz ratio) and Coondoo, Majumdar and Neogi (2000) used the proportion of SC and ST population to explain tax performance across States.

Based on the above studies, our model employs the four commonly used determinants of taxable capacity namely: per capita State Domestic Product (SDP), share of manufacturing SDP, headcount measure of poverty and urbanisation. Per capita SDP has been used in almost every study on taxable capacity. Given the level of per capita SDP, the share of non-primary sector SDP or manufacturing SDP has been used to capture the effect of industrialisation. The inclusion of poverty has been primarily to measure income distribution. Urbanisation has been used to denote the organisation of the economy and the extent of monetised transactions that could be taxed. While these four indicators were used as explanatory variables in the model, either the tax -GSDP ratio or per capita tax has been employed as the dependent variable. Given that the objective of this exercise is to make future projections of tax revenue, per capita tax revenue (which gives a better fit of the model) is used as the dependent variable.³

Of the various capacity variables, after the 1990s, data on poverty ratio is available only for 1993-94 and 1999-00. Further, regression estimates for these years showed that poverty was highly correlated with GSDP and the share of manufacturing sector GSDP with total GSDP. Only the GSDP and urbanisation had the highest explanatory power. Therefore, a pooled model using data for the period 1995-06 to 2002-03 was estimated using state-specific fixed effects. While GSDP figures were available from the TFC, actual figures of urbanisation were not readily available. However, projected urbanisation estimates of the Registrar General (Census of India 1991), were employed to estimate the model.⁴

The specification of the panel data model including the cross section observations for the years 1995-96 to 2002-03, was as follows:

$$\text{Per capita tax revenue} = \alpha_i + \beta_1(\text{per capita GSDP})_{it} + \beta_2(\text{urbanization})_{it} + u_{it}$$

Where α_i = State-specific effect for the i^{th} State.

As in the OLS model, results in the pooled model including State-specific fixed effects indicated that both per capita GSDP and urbanisation had a significant effect on per capita tax revenue (Model 1 in Table 13). The above regression specification was further modified keeping in view the first report of the ninth finance commission, which highlighted that the slope coefficients of the tax function were homogeneous within similar income groups but not across groups. States were classified into relatively high and low income groups and an interaction term of per capita GSDP and the dummy variable distinguishing the two groups was included in the regression specification to account for any differences of slopes between the two groups. The dummy variable assumed the value of 1 if a State belonged to the lower income group and zero otherwise. Results indicated that the effect of per capita GSDP on tax revenue was higher for States with relatively higher income (Model 2 in Table 13). To take into account the nonlinearity in the relationship, the model was re-estimated in the log linear form. The model in the log form was used for projecting future tax revenues, specifically for the period 2005-06 to 2009-2010 (Model 3 in Table 13).

The projection of taxable capacity from 2005-06 to 2009-2010 was made by substituting the actual/projected values of taxable capacity variables in the equation. For the same period, projections of own tax revenues were also made based on the past trend during the period from 1993-94 to 2002-03. The higher of the two estimates was used to indicate the likely generation of own taxes across States in the period 2005-06 and 2009-2010. It may be noted that at the past rate, four States viz., Gujarat, Kerala, Karnataka, and West Bengal will fall short of the projections made through the regression model and will have to generate additional taxes to reach the levels predicted by the model.

3 • The source of per capita SDP was CSO, poverty figures from Sen and Himanshu (2004) and urbanisation figures from NSSO.

4 • Analysis of the projected values of urbanisation compiled by the Registrar General and the actual census figures of 2001 show that the correlation between the two was about 0.97 and the rank correlation is 1.

Annexure XII

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Note: For a detailed reference, please refer to background papers of NCMH, India



भारत का राजपत्र The Gazette of India

EXTRAORDINARY
PART I—Section 1
PUBLISHED BY AUTHORITY

MINISTRY OF HEALTH AND FAMILY WELFARE NOTIFICATION

New Delhi, the 24th March, 2004

CONSTITUTION OF NATIONAL COMMISSION ON MACROECONOMICS AND HEALTH

1.0 Background:

No. Z-16025/45/2002-BP.—Pursuant to the recommendations contained in the report of Commission for Macroeconomics and Health (CMH), established by DG, WHO in January, 2000 the Government of India has decided to establish a Temporary National Commission for Macroeconomics and Health in India to assess the place of health in global economic development.

2.0 Objective:

The objective of this Commission will be to broadly assess the impact of increased investments in the health sector on poverty reduction as also the overall economic development of India. More specifically, this would involve establishing epidemiological base line operations and targets thereof in order to formulate a long-term programme for scaling up essential health interventions, with the focus on the poor.

3.0 Composition:

National CMH

1. Finance Minister- Chair
2. Health Minister- Chair
3. Secretary, Finance
4. Secretary, Planning Commission
5. Secretary, Health
6. Secretary, Family Welfare
7. Secretary, ISM&H.
8. DGHS
9. Chief Economic Adviser, MOF
10. Eminent economists
 - Dr. V.R. Panchmukhi, Director General, Research and Information System for the Non Aligned and other developing countries
 - Shri Bharat Jhunjunwala, Economist and Columnist

11. Eminent public health experts / administrators
 - Dr. Anil Chaturvedi, Sr. Consultant, Internal Medicine, Indraprastha Apollo Hospital and Trauma Care Specialist
 - Dr. Harshvardhan, Former Health and Education Minister, Govt. of Delhi
12. Non Government Organisations
 - Shri Abhay Bang, SEARCH (Society for Education, Action and Research in Community Health)
 - Dr. Alok Mukhopadhyay, Chief Executive, Voluntary Health Association of India
13. Chair of the Sub-Commission - Prof. Ranjit Roy Chaudhury, Emeritus Scientist, National Institute of Immunology.
14. Country Heads
 - Michael F. Carter, Country Director, World Bank
 - Dr. S.J. Habayeb, WR, World Health Organisation
15. Secretary to the Commission - Ms. Sujatha Rao, IAS (AP: 74)

Sub Commission:

1. Dr. Ranjit Roy Chaudhury - Chairman
2. 1-2 economists having significant contributions to social sectors.
3. 1-2 public health experts.
4. Ms. Sujatha Rao - Member Secretary

4.0 Terms of reference:

The NHP-2002 containing various targets and goals as also policy prescriptions on a myriad of issues in the health sector should broadly form the basis for designing the strategic framework and investment plan for scaling up essential health interventions.

- (i) To identify the priority areas for health interventions and the financing strategies to address those priorities. This would necessitate assessing the magnitude of financial resources required from domestic and external sources.
- (ii) To design a set of essential interventions to be made universally available to the entire population on the basis of public financing (with the requisite donor support);
- (iii) To initiate a multi-layer programme of health-systems strengthening, focussed on service delivery at the local level including training, construction and upgrading of infrastructure and management development to enable the health sector to achieve universal coverage of essential interventions;
- (iv) Suggest critical systemic reforms for removing non-financial constraints to scale up essential interventions and improve their reach and effectiveness.
- (v) To establish quantified targets for reduction in the burden of diseases based on sound epidemiological modelling;
- (vi) To identify key health synergies with other sectors (inter-sectoral linkages); and
- (vii) To ensure consistency of the strategy with the overall macroeconomic policy framework.

5.0 Other issues:

- (i) The Commission shall submit their report to the Government of India within one year of its being set up as per the Government of India Gazette Notification
- (ii) The Commission shall normally meet once a quarter to guide and review the work of the Sub-Commission, which would be the actual operational group for the exercise.
- (iii) The Commission / Sub Commission may conduct meetings, workshops, seminars on major relevant issues as deemed appropriate.
- (iv) The Commission / Sub Commission will have access to information / data on issues of relevance from the concerned Administrative Ministries.
- (v) If necessary, in pursuance of its objectives, the Sub Commission will be free to co-opt experts as Members, both from Government and outside, within the country and alternatively call experts as special invitees for meetings.
- (vi) The Sub Commission will be free to contract out studies on specific issues.
- (vii) The Commission will have an independent full time Secretariat headed by a Joint Secretary level officer to enable it to discharge its duties effectively.
- (viii) Grant of salary, TA/DA etc. of the Government employees taken on deputation and grant of TA/DA to the non - official members of the Commission / Sub Commission for attending meeting etc, will be governed by relevant Government rules.
- (ix) The entire expenditure for meeting the activities of the Commission will be borne by WHO.
- (x) The earlier Gazette Notification No. 273 dated 18th November, 2003, stands cancelled.

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Dissent note

Received from Dr. Bharat Jhunjunwala and commented upon by Dr. V.R. Panchamukhi, Dr. Abhay Bang, Dr. Ranjit Roy Chaudhury, Shri Alok Mukhopadhyay - all members of the NCMH.

The Commission's Report seeks to enhance government expenditures on health from present 0.9% to 3.0% of GDP. There is no evidence that present government health expenditures are having a positive impact on the health status of the people. An increase was, therefore, acceptable only if the direction and quality of government health expenditures had been re-prioritized keeping in view the experience till now.

Data from the National Human Development Report 2001 are given in the table below. It is seen that low IMR states had lower public spending on health and vice-versa. This shows that higher public expenditures on health are not having a positive impact on health indicators.

The same result was confirmed in a study undertaken for 49 large countries. It was found that the impact of government social sector expenditures on economic growth was neg-

ative - a one percent increase in social sector expenditures as a share of GNP was observed to lead to a negative impact of (-) 0.14% on the growth rate (Bharat Junjunwala, Welfare State and Globalization, Rawat Publications, 2000, page 372).

The Commission's Report fails to recognize this fact and seeks higher allocation of public revenues on health. It was necessary to explain the ineffectiveness of present public expenditures upfront and to seek higher expenditures after removing the bottlenecks.

Comments

The above said tables and statistics do not necessarily prove the points which Dr. Jhunjunwala is making. The reasons are the following:

- (i) Effectiveness of public spending on health sector cannot be and should not be gauged in terms of only Infant Mortality Rates. (ii) The direction of the flow of causality is not clear when only two variables are considered. One could also argue that the states that had had relatively lower IMR's were the ones, which received lower public spending on health- indeed a rational situation. Obviously, the states that had already realized lower IMR's, did not require higher public spending. (iii) The IMR's refer to the period 1991 and the public spending on health pertain to the year 1998-99. (We presume the years given in the tables are correct.) If that is so, then, how can Dr. Jhunjunwala draw inferences about the impact of public spending on IMR's? Some logical flaw seems to be there. (iii) All the averages seem to be simple averages. They should be weighted averages with suitable weights. Analysis based on simple averages for such diverse states is methodologically not correct. (iv) Rearrangement of the states with a different cut off rate for IMR's, as Low IMR and High IMR would give different results. Take, for example, 70 as the cut off rate for High IMR states. Then, Karnataka, Maharashtra and Punjab also get included in the High IMR category. Then, the table of the averages (again simple averages) reads as follows:

Low IMR States	1.73	50.5
High IMR States	1.45	89.0

The inference in this case is quite contrary to what Dr. Jhunjunwala puts forward. The states with lower IMR rates had had higher public spending rates!?! (Of course, we use the flow of causality in the same direction as used by Dr. Jhunjunwala). This should mean that higher public spending on health has been effective in reducing the average IMR rates. This inference is as spurious as the earlier one drawn out by Dr. Jhunjunwala.

In regard to the inference drawn in the study entitled Welfare State and Globalization, it is not clear as to what kind of regression equation has been used. If it is based on a two variable equation, then the direction of causality is debatable. Direction of causality is a debatable issue even in a multiple regression model. Further, there are questions about the good-

State	Public Spending on Health as Percentage Of Gross State Domestic Product, 1998-99 (Table 7.8)	Infant Mortality Rate 1991 (Table 5.9)
Averages		
Low IMR States	1.49	56.9
High IMR States	1.63	93.1
Low IMR States		
Manipur	1.95	28
Kerala	0.95	42
Goa	1.48	51
Haryana	0.71	52
Tamil Nadu	1.35	54
Andhra	1.61	55
Sikkim	4.92	60
West Bengal	0.94	62
Karnataka	1.01	74
Maharashtra	0.61	74
Punjab	0.86	74
High IMR States		
Bihar	0.75	75
Gujarat	0.94	78
Meghalaya	2.32	80
Himachal	2.63	82
Tripura	2.14	82
Rajasthan	1.35	87
Arunachal	3.65	91
Assam	1.05	92
Uttar Pradesh	0.91	99
Orissa	1.25	125
Madhya Pradesh	0.94	133

ness of fit, statistical significance of the estimate, tests for multicollinearity in the context of a multiple regression model, etc. It is a well known fact that results based on cross section data are of doubtful utility, unless the diversity of the country level characteristics, such as, initial conditions, institutional framework, educational status, stage of development etc. etc. is properly accounted for.

Strategic importance of social sector's development and social sector expenditure in the context of overall development of a nation and not just growth is well recognized in the literature. The World Bank study on Indonesian crisis of the late nineties has clearly brought out that one of the factors responsible for the adverse effects of the crisis situation is the inadequacy of social sector expenditure, even during the high growth period. The Social Summit, held in the early nineties, has clearly brought out the compulsions of recognizing the importance of the social aspects of development and the government's role in this regard. It is common experience that the countries that have not cared for social sector development, have landed themselves into a realm of instabilities and even poor pace of overall development.

Overall, the relationships between variables are spurious and not systematic. The specification of the econometric model is not based on any theory or on past evidence and is adhoc. Nor is a appropriate estimation method identified or used. Besides, simple regression method is inappropriate and the problem of simultaneity and specification tests have to be taken into account. Finally, definition and measurement of variables are also not given.

Dissent note

The issues of poor management of public health facilities presently have been recognized in the Commission's Report. But the issue of inter-se prioritisation between different types of health expenditures has been ignored. The focus of present public health expenditures is on medical relief or cura-

tive services (including primary, secondary and tertiary health-care). Less attention has been given to public health education, regulation, research, etc.

In a study undertaken by the National Institute of Public Finance and Policy, K N Reddy had ranked the impact of various components of public health expenditures by their impact on IMR (Health Expenditures in India, Working paper No 14, National Institute of Public Finance and Policy, New Delhi, 1992):

It will be seen that medical relief which accounted for the largest share of the public expenditures had a low rank of 5; while mass education, laboratories, research and prevention of disease were all ranked higher yet accounted for only 13.5% of the public health expenditures.

Comments

- (i) Again, one should recognize that IMR is not a comprehensive index of the Health Status of a nation. (ii) The above study is a highly dated one. (iii) Mere ranking of the different variables is not a good basis for prioritisation. One should study, in quantitative terms, (say, through analysis of variance), the relative contributions of the different variables to the explanation of the behaviour of the dependent variable in a regression equation. (iv) While one may not deny the importance of prevention and medical education and research, one should recognize that medical relief and related medical services deserve priority attention in a highly disease ridden society. (v) Comparison with many other countries clearly brings out that in India, expenditure on medical relief has been highly inadequate, in relation to the needs of the society. (vi) The absorption capacities of the different segments of the society in the different regions of the country would be quite diverse in quantity and quality. Prioritisation of the different types of services should be based on micro level studies.

Influence of Health Expenditures on IMR

Description	Rank	%share
Mass Education Training, Research & Evaluation	1	1.41
Public Health Laboratories	2	0.39
Health Education, Training & Research	3	0.68
Prevention & Control of Diseases	4	11.03
Maternal & Child Health	5	1.52
Rural Family Planning Services	5	6.18
Medical Relief	5	39.47
Urban Family Planning Services	6	1.12
Medical Education, Training and Research	7	10.74
Other Systems of Medicine	8	3.99
Others (including administration, etc)		32.47
Total		100.00

Dissent note

The Commission's Report has failed to face this issue upfront. As a result it has again asked for Rs.40,600 crores or 58% of the proposed allocation for Delivery of Services; and the total outlay proposed on Health Promotion, Regulatory Systems, and R&D is Rs.8,906 crore or 12.7% (Table 32). This will lead for the vast amount of money being spent on activities which are not effective.

Comments

Unfortunately it is true that the public health care is insensitive and inefficient, and hence, may appear not

cost effective. However, this feature is not unalterable, and should not be used to conclude that the socially supported primary health care is redundant. It only underscores the important need to make the public health care sensitive and efficient. We do not agree that the Report does not recognize these shortcomings in the public health delivery systems. Infact it quite explicitly points to the urgency of improving the efficiency of the delivery system and streamlining of its Organizational framework. The Report does provide lot of material for self-appraisal by the Government system and also for a critical assessment of the role of the Private sector, as of today. In our view, The health system, characterized by the blend of the private and public sectors, needs to be revamped and the public sector has to provide the lead for the same. This step needs to be taken up in addition to the task of expanding the Medical Relief activities in the different parts of the country.

Dissent note

In particular, there was a need to enhance public expenditure on research to say, Rs.20,000 crores from the Rs.4,000 crores provided. The country will have to invest heavily in this area to bring down the price of new drugs and technologies and to give a healthy and fitting contest to the high-cost technologies being provided by the Multinational Corporations. This money can be used to give research contracts to government institutions, universities as well as private drug companies.

Comments

In our view the expenditure on research should be increased in a phased manner keeping in mind the absorption capacity of the society. Further, the state expenditure on research should only act as a catalyst and as an engine for provoking more expenditure by the private sector on R&D activities. Further, the government should design policies in such a way as to attract more and more of multinational expenditure for setting up research laboratories within the country, so that the research talent of the country is retained within the country and the value addition benefits accrue to the nation. Government should streamline the institutional facilities for registration of patenting and for improvement of the regulatory system. In other words, it is the composition of expenditure on research support and not the size of spending alone, which matters more.

Dissent note

The difficulty is that of implementation. Rajiv Gandhi had once said that only 15 paise of the money reached the intended beneficiaries. An increase of this massive proportion will have a negative impact on economic growth, employment and welfare of the people due to heavier tax-

ation; but the benefits will be uncertain given the problems of government delivery systems that we are presently straddled with.

Comments

No one denies the need for improving the delivery system in the country. Can the Government wait until the delivery system is overhauled in such a way that full one rupee reaches the final beneficiary? Has the government stopped its spending ever since Rajiv Gandhi made those celebrated observations? The purpose of those observations was to provoke some sort of streamlining of the delivery system and to improve the status of public accountability of the governmental machinery.

Dissent note

A further difficulty is that the government has to decide between various expenditure options. The Commission has rightly established that economic growth will be positively impacted by an increase in government health expenditures along with quality improvements. But similar results may be obtained by investment in highways, irrigation, forests, power, etc. The case for higher investment in health has to be made not merely by showing a Benefit-Cost Ratio of greater than one; but by showing that the Benefit-Cost ratio in health is higher than in other investments. This has not been done. The result is likely to be that increase in public investment in health will not take place in view of the competing claims from other sectors also showing a positive impact of investment on economic growth and this report will become a non-starter.

Comments

- (i) The above paragraph recognizes with appreciation the point made in the Report that economic growth will be positively impacted by an increase in government health expenditures along with quality improvements. This recognition seems to be in contrast with the observations made at the beginning of the Dissent Note, to the effect that social expenditure has negative effect on growth.
- (ii) We should remember that this Commission was not set up to prepare a comprehensive development plan for the nation. While the benefits of investments in infrastructure etc. are well recognized in the academic and policy circles, the important fact that health expenditure should not be ignored, has not received the same attention. There is no harm in the initiative of the Commission in acting as a spokesperson for the health sector and for making a case for more resources for the health system in the country. We do not agree with the view that in view of the resource constraint, the report would be a non-starter.

We feel that the Ministry of Health should use all its clout to get the main recommendations of the Report implemented.

In one of the meetings we have found that the Honourable Minister of Health has been quite supportive of the main thrust of the Report. Missing the present opportunity once again would be, in our view, quite detrimental to the long-term interests of the people of the country.

Dissent note

The Commission has duly recognized that labour-intensive sectors need to be protected and employment and incomes generated for the poor. While this is in the right direction, a mere recommendation is inadequate in the absence of strong supporting data. The need was to place this in a comparative policy framework.

The objective is to provide the people, especially the poor, with health care services. An alternative method of attaining this would be to incur the additional 2.1% of GDP as a cost for the promotion of labour-intensive production. A heavy taxation of, for example, machine woven cloth will immediately generate crores of jobs for the poor in weaving of handloom cloth while the nation will have to buy high-priced cloth leading to lower growth rate. This will be a type of indirect taxation by forcing people to buy high-priced goods produced by labour-intensive methods. A comparative analysis of these two approaches was required. The increased incomes would enable the people to increase their household expenditures on health services and procure them from the market. This approach for reaching health care services to the people will empower the people instead of making them dependent on government provision. The cost to the economy may also be less than the 2.1% of the GDP - though this has to be studied in detail.

Comments

- i) Yes, it is important to argue that job-less growth is not good for the country. (We could also argue that growth that aggravates income disparities is not desirable. Similarly, a strategy that generates growth, which is not environmentally sustainable, should not be pursued.) It is also important to recognize that the country should encourage labour-intensive technologies in the different economic activities. But how do these contentions belittle the strategic importance of allocating more resources for strengthening the health system in the country? In fact, we should recognize that the productivity of labour, for use in labour-intensive activities, would be considerably enhanced if the health status of the human resources were made stronger.
- ii) We do not agree with the contention that by merely creating additional job opportunities and by enhancing the income levels of a few persons, we would be able to improve the health system of the country. In the globalizing world, we are dangerously poised on a situation wherein adoption of labour intensive technologies would not remain a matter of our choice. We

are also observing that as the country is integrating itself more and more with the rest of the world, income disparities are widening, costs of medical services are increasing and unethical practices on drugs supplies and medical services are growing. How can mere reliance on market forces stop all these processes? Moreover, as the State is withdrawing more and more from the production activities, its responsibilities in providing the long-neglected social sector services would increase manifold.

- iii) We fail to understand as to how heavy taxation on machine oven cloth, for generating crores of jobs for the poor, would be a feasible proposition in this fast changing market driven competitive world, particularly when the Multifiber Agreement ceases to be operative shortly. In case, this step is feasible, let it also be adopted for generating more jobs and also more resources, which could be then utilised for implementing the recommendations of this path-breaking Report of the Commission.

Dissent note

This is important because health is a State subject and the Union Government has little leeway in being able to influence the health delivery systems at the state level; while it has much greater policy freedom in economic policies.

This approach will be in tune with philosophy of lean government and the objective of reduction of fiscal deficit placed by the Fiscal Responsibility and Budget Management Act.

Comments

It is difficult to accept the contention that the Fiscal Responsibility Act should be enforced by cutting expenditures on the social sectors, in particular health expenditures. There are many other elements of wasteful government expenditures, which need to be cut and streamlined.

Dissent note

Instead of trying to reduce the household expenditures as a measure of reaching to the poor; it would be better to increase household expenditure-and-income of the poor.

The recommendations of the Commission will come to a naught if the State Governments are not able to increase their share of the tax-and-spend in the health sector. The above mentioned economic policies will not be implemented since they have not been asked for; and the tax-and-spend policies will not be implemented because of competing claims other political factors.

Comments

We do not see an alternative to an increase in public spending on health. A task force has been recommended to examine these very cases related to resource mobilization.

Some of the above points need to be taken up by the implementing ministry and other agencies, when once an action programme is worked out for implementing the Report.

Dissent note

Role of the Private Sector

The Commission's Report faults the private sector for focusing on profit maximization and being "hardly concerned with public health goals, making state intervention essential" (page 39). Certainly state intervention is necessary. But it need not be through tax-and-spend mechanism. We have successfully privatised airports, telecom, ports, electricity distribution and highways. The private sector in these areas is equally focused on profit maximization and not concerned with public welfare goals. But the regulatory framework ensures that the private sector works in tandem with public welfare goals. The ability lies in creating a regulatory framework that harnesses the energy, zeal, innovativeness and creativity of the private sector for attaining public goals.

The same approach should be adopted in the health sector. State intervention should take the form of regulations that cajole and prod the private health sector in directions determined by state policy.

Comments

The Report does recognize the imperatives of setting up regulatory mechanisms for motivating the private sectors to fall in line with the noble social obligations and responsibilities, which the public health system is supposed to uphold. The Report has also not taken kindly on the failures of the pub-

lic health system and has recommended some alternative organizational innovations for improving the functioning of the drivers of the health costs.

Dissent note

This applies to drug market as well. The Commission's Report has suggested price control on essential drugs. It should be examined whether the same price reduction could be achieved by implementing a competition policy. Government regulation should mainly be in the area of quality control rather than price.

This applies also to the area of medical education. The Commission's report says that high cost of medical education leads to high cost of medical services (page 64). The solution proposed is to provide government subsidies in medical education. An alternative would be to implement a competition policy and strengthen regulation in medical education. Competition in the medical education market will bring down the price of medical education and also the cost of services in due time.

The potential in medical tourism and telemedicine is immense and a proactive policy framework is required to fructify this potential. The Commission's report does not deal with the potentials, obstacles and policies required in this direction.

Comment

The above issues have been discussed and tradeoffs particularly in respect of welfare implications have been spelt out in the Report. As already noted, tertiary care and its attendant medical tourism was not deliberated upon in this Report.